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Organisational Capability and Competitive Advantage

edited by
Charles Harvey and Geoffrey Jones

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ORGANISATIONAL CAPABILITY AND COMPETITIVE ADVANTAGE

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Charles Harvey and Geoffrey Jones

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ABSTRACTS

Managerial Enterprises and Competitive Capabilities,
by Alfred D. Chandler, Jr.

This article relates the managerial enterprise (a firm in which decisions as to current production and distribution and allocation of resources for future production and distribution are made by salaried managers with little or no equity in the firms they operate in) to competitive success in the new capital-intensive industries that began to appear in the United States and Western Europe after the completion of modern transportation and communication networks. It begins by examining the reasons for the rapid rise of managerial firms in these industries, the global oligopolistic competition that ensued, and the organisational capabilities such competition engendered. It then reviews the competitive performance of such firms in global markets in chemicals, metals, electrical equipment, and heavy and light machinery in the early years of the century, motor vehicles in the inter-war years, and computers and semiconductors after World War II. These managerial firms grew by moving into foreign or related product markets. World War I, the Great Depression and World War II held back the full competitive impact of such growth until the 1960s. The response of US industrial firms to this intensive international, inter-industry competition of the 1960s brought unprecedented changes on the competitive capabilities of US managerial enterprises in such capital-intensive industries.

Corporate Strategy and Accounting Systems: A Comparison of Developments at Two British Steel Firms, 1898–1914, *by Gordon Boyce*

Studies of dynamic American firms reveal that new accounting systems developed during the late nineteenth and early twentieth centuries represented important adjuncts to administrative innovations which supported strategies designed to secure sustainable competitive advantages. Investigations of British firms have not previously been undertaken to provide a basis for international comparison of costing methods and systems designs which arose during the 1890–1914 period when

technological change, the rise of scientific management, and growing foreign competition called for new types of strategic decisions. The following article examines the interaction between strategic processes and systems development within two British steel firms which pursued divergent strategies during the same years that du Pont made its pioneering accounting innovations. The study draws attention to the impact of environmental conditions and firm-specific factors in influencing strategy, structure, and systems design.

The Neglected Intangible Asset: The Influence of the Trade Mark on the Rise of the Modern Corporation, *by Mira Wilkins*

Trade marks are, and have been since the late nineteenth century and throughout the twentieth century, vital business assets. The paper argues that they (along with brand names, trade names, and company names) have been of crucial importance to the rise of the modern corporation. US law and the courts have protected these property rights at the same time as the value of these assets to the modern firm has increased. The paper explains the significant role of trade marks in the evolution of the modern enterprise; provides historical data on US laws and court rulings; compares the trade mark and the patent; and indicates how, over time, the trade mark has contributed to efficiency gains in the modern firm.

Marketing in the Second Industrial Revolution: A Case Study of the Ferranti Group, 1949–63, *by Geoffrey Tweedale*

In the early 1950s the UK emerged as a world leader in the design and construction of electronic digital computers, a fact illustrated by Ferranti Ltd., the Manchester electronics firm. Ferranti achieved its dominant position with a blend of innovative technology and government support, but eventually found the computer business unprofitable. Marketing failures were partly responsible, particularly an obsession with technology and a failure to target the most profitable sectors of the industry. But paramount in the factors leading to Ferranti's sale of its computer interests were: firstly, the greater resources and market opportunities of the Americans; and secondly, the conservatism of the Ferranti family, who found the manufacture of defence computers a safer and more profitable alternative than the highly competitive data-processing market.

Industry Structure as a Competitive Advantage: The History of Japan's Post-war Steel Industry, *by Patricia A. O'Brien*

This article examines the role of the Japanese government in the development of Japan's post-war steel industry. It argues that the Japanese government's industrial policies facilitated the rapid growth and success of Japanese steel companies in the world market. During the early post-war years, the government instituted a set of comprehensive policies which constrained the supply of steel in Japan's market and contributed to the development of large-scale plants and the full exploitation of the economies of scale in steel manufacturing. The Japanese steel industry's sizable cost advantage, of course, derived from more than government policies alone. But, as this article will argue, through the Ministry of Trade and Industry, the Japanese government used its power to exploit the economics of capital-intensive industries and accelerate the formation of an efficient steel oligopoly in Japan.

Serving America's Business? Graduate Business Schools and American Business, *by Susan Ariel Aaronson*

The rise of graduate business schools occurred during a period of enormous growth, followed by dramatic decline in the fortunes of American business. Because so many M.B.A.-educated executives had difficulty managing their companies' response to dramatic changes in markets and technology, this study examines how business education has influenced managerial attitude and practices. Columbia and Harvard Business Schools were examined to see how, as well as how well, their educational approaches provided managers with the skills, information and confidence to make both entrepreneurial and operational decisions. Both schools effectively prepared their graduates for operational decisions, but did not successfully provide their managers with the skills and knowledge to facilitate entrepreneurial decisions. Moreover, the study also found that American business was not actively engaged in the direction of graduate business education. Thus, the reliance of American business upon graduate business schools may have had consequences for America's business.

Regulatory Responses to the Rise of the Market for Corporate Control in Britain in the 1950s, *by Richard Roberts*

This article examines the evolution of the regulation of takeovers in Britain in the 1950s. Takeovers began in the early 1950s arousing hostility from the authorities which regarded them as undermining economic policy. A series of bids culminating in the struggle for control of the Savoy Hotel in 1953 led to official directives which covertly curtailed the phenomenon by restricting funds for bidders. There was a second wave of bids in the late 1950s following the relaxation of restrictions on bank lending in 1958. The battles for British Aluminium and Watney Mann aroused public interest and put the restriction of takeovers on the political agenda in the run-up to the General Election of 1959. The response was the publication of a set of self-regulatory guidelines by City practitioners, which was ignored. It is argued that this was what the authorities intended since they had come to regard the threat of takeover as a useful discipline on management.

Introduction
Organisational Capability and Competitive Advantage

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The reputations of academic institutions are made or broken by the scholarly achievements of key individuals. Creativity and intellectual ambition may be fostered by good management and the provision of resources, but the quality and originality of scholarship still depends in large measure on individual ability and application. Thus, the Harvard Business School may count itself fortunate to have had the services of prolific authors like Alfred Chandler and Michael Porter, whose intellectual influence has been rising throughout the world. Both Chandler and Porter have produced a series of three conceptually united books, culminating in 1990 with the publication of two epic works: Chandler's *Scale and Scope* (860 pages) and Porter's *The Competitive Advantage of Nations* (855 pages).[1] These ambitious and wide ranging studies are certain to have a major impact on the intellectual climate of the 1990s. No business economist, strategist or historian can afford to fail to take note of the arguments and evidence brought forward in them, and likewise business leaders and policy makers would be wise to give serious consideration to their conclusions.

What is so important about the scholarship of Chandler and Porter, is their success in explaining why particular firms and industries grow strong in some nations and not others, and why some national economies advance while others remain static or experience relative decline. Both authors take the large-scale firm as the natural starting point for detailed analysis; reasoning that it is the individual firm that is in the front line in the competitive process, and that the success or failure of large enterprises ultimately dictates the fate of modern corporate economies. In both cases, the consideration of firms leads naturally to the consideration of industries – seen by Porter as the arenas in which firms compete – and thence to the clusters of industries at the heart of various national economies. Chandler's historical analysis is based on the experiences of firms in the United States, Britain and Germany that were big enough to rank amongst the 200 largest industrial enterprises in those countries at one of three benchmark years between 1913 and 1953. Porter's contemporary analysis is based upon the experiences of clusters of firms in globally competitive industries in ten countries. A comparative approach is used by both authors to illuminate concepts, prove models and draw generalisations.

Chandler is one of the pioneers of comparative business history. His first great achievement was to recognise the importance of organisation building and professional management to the growth and performance of modern enterprises. In *Strategy and Structure*[2] (1962) he compared and contrasted the experiences of four leading US corporations in devising multi-level hierarchical administrative structures in the first half of the twentieth century. A number of general propositions emerged; most notably that new organisational structures result from changes in the strategic direction of firms.

> The thesis is that . . . structure follows strategy and that the most complex type of structure is the result of the concatenation of several basic strategies. *Expansion of volume* led to the creation of an administrative office to handle one function in one local area. Growth through *geographical dispersion* brought the need for a departmental structure and headquarters to handle several local field units. The decision to expand into new types of functions called for the building of a central office and a multidepartmental structure, while the developing of new lines of products or continued growth on a national or international scale brought forth the formation of the multidivisional structure with a general office to administer the different divisions.[3]

The idea that there is a natural logic to organisation building is one that Chandler returns to time and time again in each of his later books.

The full significance of the idea was demonstrated by Chandler in his second great work, *The Visible Hand*,[4] published in 1977. In this, Chandler documents and explains the rise of large scale industrial enterprises in the US before 1940. The central idea is that firms grew large when a new breed of professional managers, working within hierarchical business structures, took over from markets responsibility for coordinating flows of goods and services throughout the economy. Following orthodox transactions costs logic, it is argued that firms internalised activities when it became cost effective to do so. Thus the growth of large enterprises, and the emergence of oligopolistic market structures, should be seen as economically rational and very much in the national interest. The arguments of economists and historians who attach more weight to the pursuit and exploitation of monopoly power when explaining the rise of big business are dismissed as lacking in both evidence and intellectual substance.

These arguments are refined and subtly extended in *Scale and Scope*. Firms that rise to the fore in an industry are those that make a substantial three-pronged investment in production, distribution and management at a critical early stage, when markets are growing rapidly and developing technologies present opportunities to reap significant economies of scale and scope. The *first movers* in an industry are able to push down unit costs through investment in new capital-intensive plant and matching distribution systems. But, in practice, the goal of stealing a march over the competition can only be realised if firms also invest in building an efficient organisation staffed by competent managers. The development of organisational capabilities is seen by Chandler as crucial to the health of the enterprise in the short, medium and long terms. It is through effective business systems and managers that firms achieve high rates of throughput and realise the potential for cost cutting and product development held out by new technologies. In this way, profit margins are improved and firms acquire the financial resources for reinvestment in new plant and diversification. Weaker competitors are eliminated, entry to the industry is made more difficult and oligopolistic competition becomes the norm. Thus, *first movers*, providing they continue to improve their organisational capabilities through investment in management and business systems, will tend to retain their position as industry leaders.

In his contribution to this volume, Chandler expounds his ideas on organisational capability and substantiates his arguments through reference to a number of important cases. These range from Standard Oil and the German chemical manufacturers of the late nineteenth century through to the global expansion of IBM since the late 1950s. It is shown that the first firms to make a 'three-pronged set of investments in manufacturing, marketing, and management essential to exploit fully the economies of scale and scope quickly dominated their industries and continued to do so for decades'. Chandler goes on to show how the first movers in various industries transformed them such that they became dominated by a few large firms which competed not through price but through quality and continued product improvement and development. Success came to be judged by market share. Oligopolistic competition sharpened the product-specific capabilities of workers and managers. These capabilities plus retained earnings became the basis for future growth. Most grew through expansion into new markets. Geographically distant expansion was based upon 'competitive advantage of organisational capabilities developed from exploiting economies of scale', and expansion into related industries through exploiting the economies of scope.

Important lessons are drawn from this analysis. If the required three-pronged investments were not made by entrepreneurs at the crucial time, then 'neither the enterprises nor the industries in which they operated became globally competitive in national or international markets'. And it becomes more difficult with time to enter dynamic industries as lagging firms lack the organisational capabilities needed to catch up. Hence the failure of British firms in a whole string of modern industries, from synthetic dyestuffs to computers: industries in which an early lead and other natural advantages were lost through a lack of investment in physical and human resources. British failure is contrasted with German success since the late nineteenth century in building well organised and professionally managed business organisations.

Chandler has not had the last word on the subject of organisational capability. His dominant concern remains the creation of managerial hierarchies, and he has relatively little to say on the subject of the business systems. Yet systems are developed and refined by firms on the basis of experience, and effective systems are an important source of organisational capability. Accounting and information systems, production and operating systems, marketing systems and human resource systems may all differ between the firms in an industry. They are potential sources of organisational strength or weakness. Leading firms, with low unit costs and high levels of productivity, generally have efficient business systems which capture accumulated knowledge and experience. It is at the systems level that much of the variation in performance between firms can be explained.

The importance of business systems as a key to corporate performance and behaviour is the theme of Gordon Boyce's article in this collection. He shows, with reference to du Ponts, how an 'integrated accounting infrastructure . . . enabled management to win sustainable economies of scale and scope within a multi-function, multi-purpose enterprise and thereby transform the structure of the American explosives industry'. Having established that accounting systems matter, Boyce goes on to consider in some detail the methods of two British iron and steel firms – South Durham Steel (SDS) and Cargo Fleet Iron (CFI) – in the early twentieth century. He argues that differences in practice between the horizontal combine SDS and the vertically integrated CFI were largely a function of corporate strategy, and that performance in both cases may have been improved through the more systematic analysis of internally and externally generated cost data. This essay, it might be added, demonstrates some of the complexities of comparative analysis at a higher level of specificity than that undertaken by grand generalisers such as Chandler and Porter.

Mira Wilkins' article, like that of Boyce, seeks to extend the intellectual universe created by Chandler. Her argument is that more than technology and organisation are required for first moving firms to prosper. Modern corporations, she reasons, must positively attract customers to them, otherwise they 'would be unable to take advantage of increasing returns to scale and scope'. The trade mark (trade name, brand name and company name) is held up as critical to the process of attracting customers, as it conveys vital information about what is being purchased and it safeguards the producer's 'skill and industry'. As modern enterprises emerged towards the end of the nineteenth century, they sought and received protection for trade marks under the law. The trade mark thus became a crucial asset which raised barriers to entry in many industries. To numerous enterprises, like Sears, Holiday Inn and McDonald's, the 'trade name seems even more fundamental than new technology'. This should be seen in a positive light, argues Wilkins, since trade marks help lower costs and increase output by encouraging higher rates of throughput, reducing promotional costs and lowering costs of borrowing. The consumer also benefits from better information and higher standards. 'In short, in many ways, involving the lowering of costs of production, costs of distribution, and costs to the consumer, the use of the trade mark provides for the efficiency gains of the modern corporation'.

In his study of the Ferranti computer group in the 1950s and early 1960s, Geoffrey Tweedale provides evidence which supports and extends the case for British entrepreneurial failure made by Chandler. Ferranti was a pioneer in the digital computer industry with significant technological advantages, but it conspicuously failed to make the first mover investments in production, distribution and management necessary for continued commercial success. The firm was eventually eclipsed by IBM and the other emerging giants of the US industry and it sold its computer division in 1963. In a splendidly balanced conclusion, Tweedale brings out the important point that while the Ferranti computer business may have suffered from weak leadership and consequent underinvestment, it did not have the key advantage which IBM and other US firms had: government agency support on a massive scale for the emergence of a self sustaining national industry. In this case at least, economies of scale and scope resulted from implicit subsidy and intervention in the first instance, as much as from the actions of far thinking business leaders.

The analytical framework offered by Chandler, as the Ferranti case illustrates, is not all embracing; attaching relatively little weight to wider environmental influences on the competitive strength of firms, industries and nations. This is recognised by Porter who notes in *The Competitive Advantage of Nations* that Chandler's research 'stresses the development of internal skills and managerial capabilities in the growth of successful international competitors'. His own work, on the other hand, 'is more on the environment surrounding firms, and how this influences the creation of strategy, skills, organisational arrangements, and success in particular fields'.[5]

Like Chandler, Porter has developed a set of techniques and models for the analysis of competitive processes, corporate growth and industrial development. In *Competitive Strategy*[6] (1980), his concern was with the analysis of industrial structure and competitor behaviour, and with the formulation of corporate strategy. Firms might gain competitive advantage – the ability to earn above industry average profits – through one of three strategies: cost leadership, product differentiation, or focusing on a particular segment of the market. In *Competitive Advantage*[7] (1985), his concern was to demonstrate how firms might implement one of these three strategies and sustain a competitive advantage over the medium and long term. His main conceptual advance was the introduction of the concept of the value chain. All firms are seen to engage in two sets of activities, one primary, the other supporting. Primary activities are inbound logistics, operations, outbound logistics, marketing and sales, and after-sales care. Support activities involve planning, finance, human resource management, technological development and procurement. A firm might be perceived as the sum of its activities, and it can secure competitive advantage by performing any or all of these activities better than its competitors. Firms create value by performing activities and the value created by the firm is reflected in the price buyers are willing to pay for its product or services. A profitable firm is one in which the cost of performing its activities is lower that the value of its output. Competitive advantage is gained when a firm either performs activities more efficiently than its competitors (cost leadership strategy) or it creates a higher value for buyers and commands a premium price (product differentiation strategy).

The general applicability of these ideas can be seen with reference to the articles already introduced by Boyce, Wilkins and Tweedale. Boyce is considering the strategy and cost accounting systems of two firms with cost leadership strategies, one more explicitly so than the other. Wilkins is concerned primarily with firms with product differentiation strategies and the means of implementing these to secure competitive advantage. Tweedale concludes his article on an up beat note. Ferranti, in selling its commercial computer business, did not retreat from the computer business entirely. It decided on a focus strategy, concentrating its efforts on the market for defence computers and control systems. It emerged as an industry leader in this field; in the process partly justifying the investment decisions of its senior managers.

The behaviour and performance of individual firms is much easier to explain than that of national economies. Porter, like Chandler, takes the *micro* to *macro* leap through a crude form of aggregation. In extending his analytical scope in *The Competitive Advantage of Nations*, he equates national economic success with the success of home based firms in globally competitive industries. He is impressed by the fact that the internationally competitive firms in an industry tend to cluster together in a few nations and often in a few regions within nations. This clustering is explained with reference to four determinants of national competitive advantage: factor conditions, demand conditions, the existence or otherwise of supporting and related industries, and micro-level factors such as corporate strategy, structure and rivalry. Not all determinants have to be present to make for an internationally competitive cluster, but evidently the likelihood of clustering is greatest when factors of production (such as skilled labour) are in abundant supply, when home demand is strong, when there are many firms in related and supplying industries, and when there is vigorous competition between efficient firms in the home market. It follows that successful national economies are those with numerous and related clusters of firms in globally competitive industries. Japan, Germany and the United States are leaders of the world economy because of the existence of numerous clusters in those countries, whereas a nation like Britain is suffering from a decline in the number of important clusters in the home economy.

Porter builds upon his earlier work in stressing the importance of corporate strategy, structure and rivalry as a determinant of national competitive advantage. He extends the range of his analysis through the introduction of the three other environmental determinants. Government is not considered as a determinant in its own right; 'its role is ultimately a partial one'.[8] Its proper role is seen as supporting industry through the promotion of education, scientific research and infrastructure investment, through the promotion of competition, and through the provision of information and promotional services. The approach of the Japanese Ministry of International Trade and Industry (MITI) is applauded in correctly highlighting for business leaders the 'important priorities and challenges they face'.[9] Direct intervention is seen as a mistake the Japanese have successfully avoided.

The valuable research published in this volume by Patricia O'Brien, a colleague of Chandler and Porter, suggests that at a critical stage in Japanese economic development – during the reconstruction of the early post-war years – MITI took a far more determinedly interventionist stance that Porter suggests. O'Brien's thesis is that Japanese government policies in steel 'helped the industry develop a competitive advantage by shaping the industry's structure'. MITI understood the importance of exploiting economies of scale through ensuring high throughput, and accordingly sought to regulate capacity. It did this through various levers and was particular successful in the 1950s in structuring the industry on oligopolistic lines. Its direct control declined from the 1960s onwards but by then the structure of the industry was fixed; with a balance struck between corporate rivalry and the recognition of mutual interest in achieving the right balance between capacity and demand. The result was the emergence of Japan as the world's leading steel producer. The view that MITI played an important role in the Japanese economic miracle, associated with the work of Chalmers Johnson, is often contested in Japan, and even by some recent American writers.[10] O'Brien's careful and well-researched essay is a powerful restatement of the traditional western assessment.

O'Brien's work points out the practical and intellectual dangers of universal policy prescriptions. So too does the article in this volume by Susan Aaronson on the management training provided by leading US business schools between 1945 and 1960. America's competitive decline in recent decades has led to a re-assessment of the value of its system of management education. Unkind observers have noted a striking correlation between economic success – as seen in Japan and Germany – and the absence of MBA-type training for future managers. Robert Locke has recently explored these matters in depth on a comparative basis.[11] Aaronson extends the criticism of the conventional wisdom that more investment in management education will yield a national competitive advantage. She puts forward the critical thesis that at the time 'American business grew reliant on graduate business schools for their managerial pool, MBA students gained managerial training twice remove from real-world experience'. Columbia and Harvard may have trained students to make operational decisions, but they were much less successful in helping their graduates develop an entrepreneurial outlook. It is somewhat paradoxical that management education in Britain proliferated – the number of British students graduating with MBAs from British business schools rose from 1,100 in 1980 to 4,500 in 1991 – just as American researchers like Aaronson were developing a powerful critique of the MBA concept.

Likewise, the research of Richard Roberts, published in the final essay in this volume, opens up a new area of academic enquiry with considerable policy implications. In this original essay, based upon official sources, Roberts examines official British and City of London reactions to the emergence for a market for corporate control (take-overs) in the 1950s and early 1960s. The article indicates the importance of national politico-institutional traditions – in this case self-regulation – in shaping attitudes and government policy. Roberts notes but does not enter into the controversial debate concerning take-over movements and the organisational capability of British firms. Chandler is not so reserved. In his essay he concludes with a sharp attack on the short-termism and financial manipulation which in his view has been a source of economic debilitation in Britain and the US in recent times. According to this view, many take-overs have been made without reference to the underlying economic logic of corporate growth; consequently they have failed to yield economies of scale and scope – hence the rising number of disinvestments in both countries. This argument is part of a wider critique of British and US firms offered by Chandler which highlights their inability to sustain organisational capability and competitive advantage. On this matter, Chandler finds a strong ally in Porter, who is equally critical of economic trends in the US and (more so) in Britain.

Alfred Chandler and Michael Porter are two of the greatest living thinkers on capitalism and the processes of global competition. Their works are coherent and thought provoking, and they have popularised concepts which might have remained buried in more formal, less well written, works of scholarship. Their work is supported by an outstanding generation of American academic writers on business who have set the international agenda for research. In business history alone, the publications of Mira Wilkins on multinationals, Thomas K. McCraw on regulation, Lou Galambos on public policy, Richard Tedlow on marketing, Robert Locke on management education, Bill Lazonick on competitive advantage, and many others, are unmatched in Europe and Japan, whose business historians are often reduced to carping criticisms of the bold generalisations of the Americans. There is an urgent need for non-American perceptions of business, past and present, to be assessed with the weight and authority of a Chandler or Porter.

In the meantime, such concepts as organisational capability and competitive advantage, popularised by Chandler and Porter, and explored in this volume, remain amongst our most potent and valued tools in the analysis of modern business. It is hoped that the essays in this collection will help clarify and develop our understanding of how firms and nations compete successfully or fail in an increasingly competitive world.

NOTES

1. A.D. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA, 1990); M.E. Porter, *The Competitive Advantage of Nations* (London, 1990).
2. A.D. Chandler, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge, MA, 1962).
3. Chandler, *Strategy and Structure*, p.14.
4. A.D. Chandler, *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA, 1977).
5. Porter, *Competitive Advantage of Nations*, p.786.
6. M.E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York, 1980).
7. M.E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance* (New York, 1985).
8. Porter, *Competitive Advantage of Nations*, p.680.
9. Porter, *Competitive Advantage of Nations*, p.681.
10. Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925–1975* (Stanford, 1982). For a contrary viewpoint, see David Friedman, *The Misunderstood Miracle: Industrial Development and Political Change in Japan* (Ithaca, 1989).
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Managerial Enterprise and Competitive Capabilities

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For the past century large managerial enterprises have been engines of economic growth and transformation in modern economies. These enterprises were created and continued to grow in much the same ways; and that pattern of creation and growth was based on a powerful economic logic. By following the logic of that dynamic, the decisions of entrepreneurs and managers helped to make Germany Europe's most powerful industrial nation before World War I, the United States the most productive in the world from the 1920s to the 1960s, and since the 1960s Japan their most successful competitor.

Departure from the dynamic – the ignoring of its logic – has been equally significant: since the 1960s, it has been largely responsible for the loss of competitive capabilities in such vital American industries as semiconductors, machine tools and consumer electronics and for the weakening of competitive abilities in metals and in machinery, including electrical equipment. On the other hand, in other industries, particularly computers and chemicals, managers sticking to that logic have maintained their competitive power at home and abroad. Finally, individual companies in machinery and metals, by staying with the logic or returning to it, have been able to maintain or retain their competitive strength.

This article begins by reviewing the pattern of the creation and evolution of managerial industrial enterprises and the logic behind that pattern. It then examines specific historical developments in the industries most critical to the growth of modern industrial economies – chemicals, electrical equipment, machinery (light and heavy), metals, motor vehicles and computers. In all of these managers followed the logic of the pattern outlined. It next looks at the competitive performance – success and failure – in those same industries in the past quarter of a century. Its conclusion suggests the long-term implications of the dynamic and the deviations from its logic for maintaining the competitive capabilities of vital American industries.

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By managerial enterprise I mean simply those industrial concerns where decisions as to current production and distribution and those involving investments in facilities and personnel for future production and distribution are made by a hierarchy of lower, middle and top salaried managers. Although such hierarchical organisations were common in military, government, and religious institutions in earlier centuries, they did not appear in commerce and industry until the coming of the railroads in the United States and Europe in the mid-nineteenth century. Before that time owners of business enterprise managed and managers owned.

Such managerial enterprises appeared in production and distribution shortly after they did in transportation and communication. In production they came suddenly in the 1880s and 1890s. From then on they continued to cluster in new capital-intensive industries with similar characteristics. And they were born and grew in much the same manner. From the start such hierarchies of salaried managers were governed by a board of directors consisting of inside directors – full-time senior managers – and outside directors – usually part-time representatives of owners.

Tables 1 and 2 indicate the industries in which large managerial firms have always clustered. Table 1 gives the location country by country and industry by industry in 1973 for all enterprises employing more than 20,000 persons. Seventy per cent of these enterprises clustered in seven of 20 manufacturing groups of the US Standard Industrial Classification – in food, chemicals, oil, primary metals and the three machinery groups. Just over 24 per cent of these were in subcategories of six other two-digit industries which had the same capital-intensive characteristics – cigarettes in tobacco, tires in rubber, newsprint in paper, plate and flat glass in stone, clay and glass, cans and razor blades in fabricated metals, mass-produced cameras in instruments. Only just over five per cent were in the more labour intensive industries – apparel, textiles, lumber, furniture, publishing and printing, leather, and miscellaneous. Table 2 shows that the pattern of concentration was much the same in the United States throughout the twentieth century. This, too, was the case for the 200 largest enterprises in the same years in Great Britain, Germany, France and Japan.

As the Nobel Prize winner, Simon Kuznets, emphasized in his *Economic Growth of Nations*, these capital-intensive industries in which the large firms clustered were the fastest growing of their day; while the labour intensive ones in which few such firms appeared were, in Kuznets'

TABLE 1

DISTRIBUTION OF WORLD'S LARGEST INDUSTRIAL ENTERPRISES WITH MORE THAN 20,000 EMPLOYEES, BY INDUSTRY AND COUNTRY, 1973[a]

Group	Industry	United States	Outside United States	Great Britain	West Germany	Japan	France	Others	Total
20	Food	22	17	13	0	1	1	2	39
21	Tobacco	3	4	3	1	0	0	0	7
22	Textiles	7	6	3	0	2	1	0	13
23	Apparel	6	0	0	0	0	0	0	6
24	Lumber	4	2	0	0	0	0	2	6
25	Furniture	0	0	0	0	0	0	0	0
26	Paper	7	3	3	0	0	0	0	10
27	Printing and publishing	0	0	0	0	0	0	0	0
28	Chemicals	24	28	4	5	3	6	10	52
29	Petroleum	14	12	2	0	0	2	8	26
30	Rubber	5	5	1	1	1	1	1	10
31	Leather	2	0	0	0	0	0	0	2
32	Stone, clay and glass	7	8	3	0	0	3	2	15
33	Primary metals	13	35	2	9	5	4	15	48
34	Fabricated metals	8	6	5	1	0	0	0	14
35	Machinery	22	12	2	3	2	0	5	34
36	Electrical machinery	20	25	4	5	7	2	7	45
37	Transportation equipment	22	23	3	3	7	4	6	45
38	Instruments[b]	4	1	0	0	0	0	0	5
39	Miscellaneous	2	0	0	0	0	0	0	2
—	Conglomerate	19	3	2	1	0	0	0	22
	Total	211	190	50	29	28	24	59	401

Notes: a. The *Fortune* lists include enterprises of non-communist countries only.
b. Medical equipment and supplies, photographic equipment and supplies, and watches and clocks.

Sources: Compiled from 'The Fortune Directory of the 500 Largest Industrial Corporations', *Fortune* (May 1974), pp.230–57: 'The Fortune Directory of the 300 Largest Industrial Corporations outside the US', *Fortune* (August 1974), pp.174–81.

words, 'lagging industries'. In the economies of the United States, Great Britain, and Germany these capital-intensive industries, in turn, made manufacturing the fastest growing subdivision of the industrial sector which also included mining, construction, utilities, and transportation and communication. In the three economies the industrial sector, in its turn, grew faster than either the agricultural or service sectors. And these three economies until the 1930s accounted for close to two-thirds of the world's industrial output. In this sense large managerial enterprises have been primary engines of economic growth for the past century.[1]

Why, then, did these enterprises appear suddenly in the 1880s and 1890s in capital-intensive high-growth industries? They did so because in those industries such enterprises enjoyed the cost advantages of the economies of scale and scope. In those industries larger plants had significant cost advantages over smaller ones in producing a single line of products. The cost per unit dropped much more quickly as volume of output increased than was the case in the labour-intensive industries. Besides such economies of scale large works also often utilised the economies of scope – those that resulted from making different products in one factory using much the same raw and semifinished materials and the same intermediate processes of production.[2]

Such potential cost advantages of scale and scope, however, could only be fully realized if a constant flow of materials was maintained to assure capacity utilisation. If the volume of flow fell below rated capacity, then the actual cost per unit quickly rose. It did so because fixed costs remained high and sunk costs – the original capital investment – were larger than they were in the more labour-intensive industries.

TABLE 2

DISTRIBUTION OF THE 200 LARGEST INDUSTRIAL ENTERPRISES IN THE UNITED STATES, BY INDUSTRY, 1917–73[a]

Group	Industry	1917	1930	1948	1973
20	Food	29	31	27	22
21	Tobacco	6	5	5	3
22	Textiles	6	4	8	3
23	Apparel	3	0	0	0
24	Lumber	3	4	2	4
25	Furniture	0	1	1	0
26	Paper	5	8	6	9
27	Printing and publishing	2	2	2	1
28	Chemicals	20	20	23	28
29	Petroleum	22	26	22	22
30	Rubber	5	5	5	5
31	Leather	4	2	2	0
32	Stone, clay and glass	5	8	6	7
33	Primary metals	31	23	23	19
34	Fabricated metals	11	10	6	5
35	Machinery	17	19	23	16
36	Electrical machinery	5	5	7	13
37	Transportation equipment	24	23	29	19
38	Instruments	1	2	1	4
39	Miscellaneous	1	2	2	1
—	Conglomerate	0	0	0	19
	Total	200	200	200	200

Note: a. See Table 1 notes.
Sources: Appendixes A.1-A.3 for 1917, 1930, and 1948 from Chandler, *Scale and Scope*; figures for 1973 compiled from *Fortune* (May 1974), pp.230–57.

The advantages of the economies of scale and scope can be illustrated by cost figures of more than a century ago – those from two of the very first modern managerial industrial enterprises – the Standard Oil Co. (its successor, Exxon, is still the world's largest oil company) and the oldest and still the world's largest chemical companies – the German firms, Bayer, BASF and Hoechst. John D. Rockefeller built the world's largest refinery in Cleveland only a few years after oil was discovered in north-eastern Pennsylvania. By increasing capacity from 500 barrels a day to over 1,500 barrels his enterprise reduced the cost of making a gallon of kerosene from 5¢ in 1870 to 2.5¢ in 1879. In 1881 Rockefeller's Standard Oil and allied companies formed the Standard Oil Trust. Their aim was not to obtain a monopoly. Linked by financial ties, they already controlled close to 90 per cent of the kerosene produced in the United States. Instead, the Trust was formed to provide the legal instrument that permitted the refining facilities of the many companies to be placed under a single management. The new enterprise quickly concentrated close to a quarter of the world's production into three 6,000 barrel refineries, resulting in economies of scale which helped the enterprise to reduce its unit cost per gallon to 0.534¢ in 1884 and to 0.425¢ in 1885. At the same time profit per gallon rose from 0.0534¢ in 1884 to 1.004¢ in 1885. At that cost Standard Oil's American-made kerosene was able to undersell that made from Russian oil in Europe and that made from South-east Asian oil in China, and also to produce profits that created at least three of the world's largest industrial fortunes.

When the three German companies began production of a new-man-made dye, red alizarin, its price was close to 200 marks per kilo. By 1878 the price had fallen to 23 marks per kilo, and by 1886 it had dropped to nine marks. Comparable price reductions were made in other dyes. The addition of new dyes and then pharmaceuticals, added little cost to the production of each item and the additions permitted a reduction in the total unit cost of the others. By the 1880s a large German plant was producing more than 500 different dyes and pharmaceuticals at unit costs far below that of smaller competitors.

The story of oil and chemicals was repeated in the same years in other industries using new capital-intensive technologies of production including steel, copper, aluminium, glass, rubber, branded packaged food and drug products, and a wide variety of machinery. And they suddenly appeared in the 1880s and the 1890s because the completion and integration of modern transportation and communication networks – the railroad, the telegraph, the steamship, and the cable – made possible for the first time in history the high-volume, high-speed, flow of goods and messages without which substantial economies of scale and scope could not be realized. Transportation that depended on the power of animals, wind, and current was too slow and too uncertain to maintain the level of flow necessary to achieve the potential cost advantages of the new technologies.

In all these industries, however, the new large plants were able to maintain the cost advantages of scale and scope only if the entrepreneurs who built them made two other sets of investments. They had to create a national and then international marketing and distributing organisation, and they had to recruit teams of lower and middle managers to co-ordinate the flow of products through the processes of production and distribution and top managers to coordinate and monitor current operations and to plan and allocate resources for future activities. The first to make such a three-pronged set of investments in manufacturing, marketing, and management essential to exploit fully the economies of scale and scope quickly dominated their industries and continued to do so for decades.

It is important here to distinguish between the *inventors* of a product or process, the *pioneers* who first commercialise such an innovation, and the *first movers* who made the three-pronged investment essential to exploit fully the economies of scale or scope. For example, in mainframe computers several pioneers made investments large enough to market the innovation on a national scale. But it was IBM's massive investments in the production, distribution and management of its System 360 that made it the first mover in the industry. And what IBM did in computers, Rockefeller did in oil and the three German companies in chemicals.

The tripartite investment gave the first movers powerful advantages; to benefit from comparable costs, challengers had to construct plants of comparable size, and to do so after the first movers had already begun to work out the bugs in the new production processes. The challengers had to create distribution and selling organisations to capture markets where first movers were already established. They had to recruit management teams to compete with those already well down the learning curve in their specialised activities of production, distribution, and (in technologically advanced industries) research and development. Challengers did appear, but they were only a few.

The three-pronged investment by the first movers (as in the case of German chemicals there were often more than one) transformed the structure of industries. The new capital-intensive industries were quickly dominated by a small number of large managerial enterprises which competed for market share and profit in a new oligopolistic manner. Price remained a significant competitive weapon, but these firms competed more forcefully through functional and strategic efficiency; that is, by carrying out processes of production and distribution more capably by improving both product and process through systematical research and development, by locating more suitable sources of supply, by providing more effective marketing services, by product differentiation (in branded packaged products primarily through advertising), and finally by moving more quickly into expanding markets and out of declining ones. The test of such competition was changing market share, and in the new oligopolistic industries market share and profits changed constantly.

Such oligopolistic competition sharpened the product-specific capabilities of workers and managers. Such capabilities, plus the retained earnings from profits of the new capital-intensive technologies, became the basis for the continuing growth of these managerial enterprises. Firms did grow by combining with competitors (horizontal combination) or by moving backward to control materials and forward to control outlets (vertical integration), but they took these routes usually in response to specific situations. For most, the continuing long-term strategy of growth was expansion into new markets – either into new geographical areas or into related product markets. The move into geographically distant markets was normally based on competitive advantage of organisational capabilities developed from exploiting economies of scale. Moves into related industries rested more on those advantages developed from the exploitation of the economies of scope. Such organizational capabilities honed by oligopolistic competition provided the dynamic for the continuing growth of such firms, of the industries which they dominated, and of the national economies in which they operated.

The Historical Experience to World War II

Of all the new capital-intensive industries in what historians have properly called the Second Industrial Revolution – those that permitted the exploitation of the cost advantages of scale and scope – the chemical industry was the most technologically advanced and provided the widest range of new industrial and consumer products including man-made dyes, medicines, fertilizers, textiles, film, and other materials. The first major products of the new industry were synthetic dyes.

Here the British entrepreneurs were the pioneers. An Englishman, William Perkin, invented the first such dyes. The world's largest market for man-made dyes remained until after World War II the huge British textile industry. Dyes were made from coal, and Britain had the largest supplies of high quality coal in Europe. In the 1870s, Britain had almost every comparative advantage in the new dye industry. It lacked only experienced chemists, and British entrepreneurs had little difficulty in hiring trained German chemists to their factories. By any economic criteria the British entrepreneurs should have quickly dominated the world in this new industry. But they failed to make the essential investments in production, distribution and management. Instead the Germans – Bayer, BASF, and Hoesch and three smaller enterprises – made the first mover investments.[3]

The Bayer experience makes the point. In the 1880s Frederick Bayer & Co. was a relatively small pioneer. In that decade under the guidance of a young chemist, Carl Duisburg, still in his twenties, the company, exploiting economies of scope, developed new dyes and then pharmaceuticals. In 1891 it decided to expand by purchasing a dye maker on the Rhine near Cologne – a better location for receiving high movements of supplies into and finished goods out of the works than the original works at Eberfeld. At first the plan was to enlarge the Leverkusen plant, but then Duisburg convinced his colleagues to scrap its existing facilities and build a giant new works that would meet the company's needs for the next half-century.

Duisburg designed the new works to assure a steady flow of materials from their arrival at the works through the processes of production to storage and shipment of the final products. There were to be five processing departments, a sixth department consisting of the many workshops and offices required to service the processing plants, and Department VII, Central Administration. Department I, which included raw-material storage and the pump house and concentrated on the production of inorganic chemicals, was situated along the Rhine wharf. Separated from it by a street 120 feet wide (such streets separated all the departments) was Department II, which produced the organic intermediates. Then came Department III, making alizarin and azo dye stuffs. Department IV produced aniline dyes. Department V made pharmaceuticals. The last row back from the river consisted of the grinding and mixing plants, the refrigeration facilities, the power station, and the packaging and other works that made up Department VI. Along the wide streets ran the canals to supply the water needed in processing, the gas and electric lines, and 40 miles of railway tracks.

By this plan each of the five production departments was to have its own laboratories and engineering staff, for Duisberg thought it essential 'to place all chemists working in the same area in a common laboratory, so as to make possible a common working of various people, and encourage each individual by mutual stimulation'. The offices of the production engineers were to be close to the chemical laboratories so 'that works chemists can at any time get into direct communication with the works engineers'.[4] When completed the works covered 760 acres, and employed close to 8,000 workers. There was no comparable chemical establishment anywhere in the world except those of BASF and Hoechst. Today Leverkusen is still one of the most efficient chemical works in the world. Its laboratories became and remained amongst the most innovative in the world, producing a stream of new dyes, pharmaceuticals, films, fertilizers, varnishes, resins, and other chemical products.

By the time the Leverkusen works was in operation, Bayer's global sales force of experienced chemists were contacting and working with more than 20,000 customers; for every user of dyes in cloth, leather, paper, and other materials had to be taught how to apply the new products that had very different properties from natural dyes. And by the turn of the century Bayer and the other German chemical leaders had created the largest and most carefully defined managerial hierarchies the world had yet seen.

As might be expected, the resulting German competitive advantages quickly demolished Britain's economic comparative advantages. In 1913 160,000 tons of dyes were produced. Of these the German firms made 140,000 tons (72 per cent being produced by the Big Three); 10,000 more were produced by Swiss neighbours up the Rhine.[5] Total British production was 4,400 tons. The story was much the same for pharmaceuticals, films, agricultural chemicals, and electro-chemicals.

The electrical equipment industry, while employing a smaller number of professionally trained technicians and scientists, was even more of a transformer of economic life than chemicals. Not only did the new industry provide new sources of light and power that so altered urban living and transportation, but it changed the ways of the working place. Moreover, a new electrolytic process transformed and greatly reduced costs of producing copper, aluminum, and several chemicals. In this industry British pioneers were as active as those in Germany and the United States. But within a decade after the establishment by Thomas Edison of the first central power station (it was in New York City) two first movers in the United States – General Electric and Westinghouse – and two in Germany – Siemens and AEG – had made the investments in production and distribution necessary to exploit the economies of scale and scope.

Again, the German story is illustrative. In 1903, after merging with a major competitor, Siemens embarked on a ten year plan of systematising and rationalising production by concentrating production in what became the world's largest industrial complex under a single management. Where Bayer had built a single giant works, Siemens constructed several – one employing more than 8,000 workers for telecommunication equipment and instruments, and somewhat smaller ones for large machinery, small motors, dynamos, electrochemicals, and cables. Employing more than 20,000 workers and covering several square miles, the district of Berlin which this complex dominated soon became officially designated as Siemensstadt. As in the case of Bayer this massive investment in production was financed primarily from retained earnings. In these same years, its rival AEG built a comparable though somewhat less massive set of works only a few miles away. Nothing comparable occurred in Britain, even though Sir William Mather, senior partner of Mather & Platt, one of the largest British textile machinery manufacturers, had obtained the Edison patents at the same time as had Rathenau at AEG.

As a result, by 1913 two-thirds of the electrical equipment machinery made in British factories by British labour was produced by subsidiaries of General Electric, Westinghouse and Siemens. AEG sold more products in Britain than did the largest British firm. Mather & Platt had become a minor producer of electrical equipment for factories. From the 1890s on continuing research and development to improve existing products and develop new ones was carried out in Schenectady, Pittsburgh and Berlin, but not in Britain.

What was true of chemicals was also true of steel, copper and other metals, and in heavy and light machinery. In metals, the British pioneered, but the Germans and Americans made the necessary investments that quickly drove the British from international markets. In machinery, the British did not even try. The Germans quickly dominated the production of heavy processing machinery and equipment for the new industries of the Second Industrial Revolution, and for many of the old; while the Americans acquired a near global monopoly in machinery which was produced in volume by fabricating and assembling standardised parts, a process that by the 1880s was already known as 'the American system of manufacturing'.[6]

In office machinery, such first movers as Burroughs Adding Machine, National Cash Register, the Remington Typewriter Co., and the Computing-Tabulating-Recording Co. (later renamed International Business Machines) all dominated their industries world wide until well after World War II. In sewing machines the Singer Sewing Machine and in agricultural equipment McCormick Harvesting Machine were world leaders. Indeed in 1913 the two largest commercial enterprises in imperial Russia were Singer and International Harvester. (The latter was a 1902 merger in which the McCormick company was the major player.) By then Singer produced 79,000 machines annually in its Moscow factory with a work force of 2,500 wage earners and 300 salaried employees; while its sales force of more than 25,000 workers covered the vast territory from the Sea of Japan to the Baltic. For both companies their Russian operations were smaller than those of their other European business based on Singer's large factories in Scotland and Germany and Harvester's major plant in Germany. By World War I, American firms had achieved comparable global competitive power in the production of elevators (Otis Elevator), pumps (Worthington Pump), boilers (Babcock & Wilcox), printing presses (Merganthaler Linotype) and heating equipment (American Radiator). On the other hand, American machine tool makers which provided much of the equipment used by these companies in their processes of production, did not make large investments in production, distribution, and management. That industry continued to consist of a sizable number of small, mostly family-owned firms.[7]

In the inter-war years chemical, electrical equipment and machinery industries continued to be major drivers of economic growth. As late as 1946, 45 per cent of scientific personnel in American industry were employed in the first two of these industries – 30 per cent in chemicals, and 15 per cent in electrical equipment.[8] The chemical industry in the United States prospered as such pre-World War I firms as Du Pont, Dow, Monsanto, and two major mergers (Union Carbide in 1917 and Allied Chemical in 1920) expanded into new markets based on the organisational capabilities they had developed in the exploitation of scale and scope. So, too, in Britain formation of Imperial Chemical Industries in 1925 permitted the British industry to begin to challenge the Germans. But in other key industries – electrical equipment, heavy industrial and light mass produced machinery – British enterprises never became major contenders.

After World War I, the automobile industry surpassed all others as the prime source of economic growth and transformation. By 1908, less than a decade after the automobile was first sold commercially, the world's two largest automobile companies were the Ford Motor Co. and General Motors. It was Ford which made the first mover investments. With the building of the Highland Park factory where the moving assembly line was adopted in 1913, the creation of a national and international marketing organisation, and the recruitment of a team of excellent managers, Ford had even a stronger world-wide monopoly of low priced cars than did the American light machinery makers in their industries. Comparable investments in middle priced and high priced automobiles were made in the 1920s by General Motors and then by Chrysler. Both soon successfully challenged Ford in the low price range

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– GM with Chevrolet and Chrysler with Plymouth. By developing a full line of cars (and so to benefit more extensively from the economies of scale) both were able to remain profitable when the drastic drop in demand in the 1930s meant that the smaller middle priced manufacturers could no longer remain viable as automobile makers, with only Willys (it became American Motors) surviving beyond the early 1950s (thanks to its production of the military Jeep). By 1929 the United States produced 85 per cent of the world's automobiles and much of the remaining 15 per cent were produced by subsidiaries of American companies abroad. Ford and General Motors were among the leading car producers in Britain and Germany. In 1928 all but 347 of the 25,000 automobiles produced in Japan were assembled by General Motors and Ford.[9]

In automobiles, functional and strategic competition led to rapid shifts in market share and profits. Henry Ford destroyed his first mover advantages by firing his most effective executives (several went to General Motors), and his company's share of the market dropped from 55 per cent in 1921 to 19 per cent in 1940; while General Motors' share rose from 11 per cent to 45 per cent and Chrysler, after acquiring Dodge in 1925, from four per cent to 24 per cent in 1940. From 1927 until 1937 Ford's loses were about $100 million. In the same depression years General Motors profits after taxes were just under $2 billion! (In the early 1930s annual GNP dropped to below $100 billion.) Only after Henry Ford died and after his son hired a group of General Motors managers to restructure his company did Ford begin to regain competitive strength and profits.

Historical Experience Following World War II

In the years after World War II, as the information revolution transformed industries and economies, the computer industry took on the role that the automobile had had in the 1920s and the chemical, electrical and machinery industries in the years before World War I. The beginnings and the processes of growth of the leaders in this industry were similar to those of earlier industries with one striking different – most pioneers were not, as they had been in the past, entrepreneurs. Instead they were long-established managerial enterprises in closely related industries.

The first to appreciate the opportunities for the commercial application of the giant costly computers initially developed for scientific and military purposes were American business machine companies. In 1950 Remington Rand, the nation's leading typewriter company, began to develop UNIVAC, the first computer designed for business uses. (In 1955 Remington Rand merged with Sperry, a large defence contractor, to form Sperry Rand in order to obtain greater capabilities in research and production of electronic products.) Other leading business machinery firms – IBM, Burroughs Adding Machine, National Cash Register, and Honeywell – quickly followed. (Honeywell, a maker of heat control systems, had in 1934 challenged IBM by acquiring a small tabulating computing company.) Other pioneers were large established enterprises with electronic capabilities – Raytheon, General Electric, RCA, and Philco. The only new firm to compete with the pioneering mainframe producers was Control Data. All these pioneers made substantial investments in producing and distributing the new machine.[10]

But IBM was the first pioneer to make the investments that transformed it into the industry's first mover, much as Ford, Rockefeller and the leading American and German chemical, machinery and metal companies had done in earlier years. The strategy of IBM's top managers, particularly Thomas Watson, Jr., was to reach as wide a commercial market as possible by utilising the cost advantages of the economies of scale. This called for all-purpose machines, whose development demanded not only the standardisation of machines and components but also compatibility between different closely related products. Several years of intensive investment in research and then in production led in 1964 to the marketing of the System 360, a broad line of compatible mainframe computers with peripherals for a wide range of uses. The massive investment in research and production, the swift expansion of the company's international marketing organisation, and the impressive increase in the size of its management gave IBM the dominance in the industry that it retains today.[11]

With the one exception of Control Data, IBM's successful competitors continued to be business machine companies. Like Remington Rand, these three each acquired electronic companies in order to improve their production and research competences. On the other hand, the electronic companies dropped out. Raytheon and General Electric sold their operations to Honeywell, RCA's computer activities were acquired by Sperry Rand, and Philco dropped its computer operations soon after it was taken over by the Ford Motor Co.

In mini- and micro-computers, entrepreneurial firms played a greater role, for while the established business machinery firms were concentrating on developing the capabilities of the mainframe, other opportunities emerged for machines using different technologies for different markets. In minicomputers – low cost machines for specific purposes, particularly scientific and academic – the first mover was Ken Olsen's Digital Equipment (DEC), which after several years of development, began volume production of the PDP-8 line in 1965.

Again, heavy investment in production was accompanied by the creation of a world-wide marketing network and a comparable increase in the size of management. In 1968 Edson de Castro, the engineer who headed the design team for the PDP-8, left DEC to form Data General and made a comparable set of investments. However, a third pioneer, Scientific Data Systems (SDS), failed to do so. After it was taken over by Xerox in 1969, it soon disappeared from the scene.

The most successful challengers to DEC and Data General were not entrepreneurial enterprises but established managerial ones. By 1980 DEC ranked second and Data General fourth in revenues generated. IBM was first, Burroughs third, and Hewlett Packard, an established producer of electronic measuring and testing instruments, fifth. The sixth was Wang Laboratories, a first mover with a new product for a different market – word processing and office systems. And these six accounted for 75 per cent of revenues generated in the minicomputer branch of the industry.[12]

The pattern is much the same in personal (micro) computers. These machines employed a still different architecture for a still different market – the individual user. The first entrepreneurial firms to make extensive three-pronged inter-related investments – Apple Computer, Tandy (Radio Shack), and Commodore – accounted by 1980 for 72 per cent of dollar sales in the United States. By then, three pioneers which together in 1976 accounted for 50 per cent of sales, but which failed to make such investments, had already dropped by the wayside. Two years later, however, three established firms – IBM, the Nippon Electric Co. (NEC) of Tokyo and Hewlett Packard – moved in. By 1982 they accounted for 35 per cent of sales; driving the market share of the three entrepreneurial first movers down to 48 per cent.[13]

Like the American machinery firms of earlier years, these computer companies quickly moved abroad. IBM almost immediately became the leading producer of mainframe computers in Europe. DEC led in microcomputers. By the mid-1980s Apple, IBM and NEC produced half the world's output of personal computers. All but one of the successful European or Japanese competitors were created by long-established enterprises. True to form, British pioneers failed to make the necessary investments. So by 1974 only a little over a quarter of all installations in Britain were from British producers.[14]

This brief review of the patterns of growth of the managerial enterprises that dominated the past century's most vital industries demonstrates the logic behind these patterns by emphasising three points.

First, unless the necessary investments in production, marketing, and management were made to exploit fully the cost advantages of scale and scope, neither the enterprises nor the industries in which they operated became competitive in national and international markets. To remain competitive, entrepreneurs in a new capital-intensive industry had to create enterprises administered by teams of lower, middle, and top managers.

The second point is that the opportunity to make such investments and to create such organisations was short-lived. Once the opportunity was lost, it was difficult for an enterprise and its national industry to regain competitive capabilities, even in its own domestic market. The British created such capabilities in chemicals with the formation of ICI, but they never developed a strong competitive edge in electrical equipment, heavy and light machinery, automobiles, and computers. Nor did they in steel, copper, or other metals.

The third point is that the first movers and the few successful challengers continued to grow by moving abroad and into related industries. The Americans became multinational in light machinery, automobiles, and computers using capabilities based on the economies of scale. The German and American electrical companies and the German and then American chemical companies also became multi-industrial by moving into related product markets based on the capabilities developed in using the economies of scope. These patterns of growth, based on organisational capabilities developed by exploiting the cost advantages of scale and scope, intensified inter-firm competition. The full impact of international and inter-industry competition created by such growth, however, was held back by world events. World War I and the massive inflation and military occupation of the Ruhr and the Rhineland that followed kept German companies out of international markets for almost a decade. They returned with impressive strength between 1925 and 1929, only to be reined in again by the coming of the Great Depression, then Hitler's command economy and the disastrous Second World War. Depression, global war and post-war recovery also dampened or redirected the growth of American enterprises and those of the smaller number of managerial enterprises in European nations other than Germany. It was not, therefore, until the 1960s, after the economic health of the European nations had been fully restored, and after Japan, following a massive transfer of technology, began to industrialise rapidly, that the international competition which had been developing before 1914 became a full-fledged reality. In the same post-World War II years, unprecedented investments in research and development intensified inter-industry competition in the United States and Europe.

The American Response to Intensified Competition

Because American enterprises had become so numerous in the capital-intensive industries at home, as well as abroad (Table 1) and because the American market was the world's largest and richest, the new competition provided many American enterprises in these industries with the greatest challenge that they had to face since their establishment decades earlier. The challenge was unexpected, as the American economy of the 1960s was prosperous. Even so, markets became saturated. With capacity underutilised, costs rose.

Many American managers responded as they had in the past, and as the office machinery firms did in the 1960s, by re-investing to improve their capabilities in their own and closely related industries. Many others, however, began to grow by moving for the first time into industries where their enterprise had no particular competitive advantage. These companies were cash-laden precisely because the post-war years of American hegemony had been so prosperous. Moreover, because they had had little competition abroad since well before World War II, and because they were being told by academic practitioners of management science that management was a general skill, many – but certainly not all – had come to believe that if they were successful managers in their own industries, they could be just as successful in others. So they sought to invest retained earnings in industries that appeared to show a greater or even potential than their own, even though those industries were only distantly related or even unrelated to their companies' core capabilities. Because of their lack of knowledge of the operations of their target industries, they obtained facilities and personnel through acquisitions or occasionally merger rather than, as had been the case in earlier moves into related industries, through direct investment, that is by building of their own factories and hiring or transferring their own workers and managers.

By the late 1960s, the drive for growth through acquisition and merger had become almost a mania. The number of acquisitions and mergers rose from just over 2,000 in 1965 to over 6,000 in 1969, dropping back to 2,861 by 1974. During the period 1963–72 close to three-quarters of the assets acquired were for product diversification. Half of these were in unrelated product lines. In the years 1973–77 half of all assets acquired through merger and acquisition came from those in unrelated industries.[15]

Such unprecedented diversification led to another new phenomenon. That was the separation between top management at the corporate office – the executives responsible for co-ordinating, managing, and planning and allocating resources for the enterprise as a whole – and the middle managers responsible for maintaining the competitive capabilities of the operating divisions in the battle for market share and profits.

Massive diversification led to such separation for two reasons. First, the top managers often had little specific knowledge of, and experience with, the technological processes and markets of many of the divisions or subsidiaries they had acquired. The second was simply that the large number of different businesses acquired created an extraordinary overload in decision-making at the corporate office. Whereas before World War II the corporate office of large diversified international enterprises rarely managed more than ten divisions and only the largest as many as 25, by 1969 numerous companies were operating from 40 to 70 divisions and a few had even more.[16]

Because few senior executives had the training or experience necessary to evaluate the proposals and monitor the performance of so many divisions in so many different activities, they had to rely more and more on impersonal statistics. As Thomas Johnson and Robert Kaplan point out in *Relevance Lost: The Rise and Fall of Managerial Accounting*, such data were becoming increasingly less pertinent to controlling costs realistically and understanding the complexities of competitive battles.[17]

Managerial weaknesses resulting from the separation of top and operating management quickly led to another new phenomenon – the selling off of operating units in unheard-of numbers. Before the mid-1960s, divestitures were rare. By the early 1970s they had become commonplace. In 1965 there was only one divestiture for every 11 mergers; in 1969, at the height of the merger boom, the ratio was 1 to 8; by 1970, 1 to 2.4; and then, for the four years 1974 to 1977, the ratio was close to or even under 1 to 2.[18]

The unprecedented number of mergers and acquisitions followed so shortly by an unprecedented number of divestitures helped to bring into being another new phenomenon – the buying and selling of corporations as an established business, and a most lucrative one at that. Although the industrialists pioneered this business, the financial community prospered from it. This brand-new business was further stimulated by an unprecedented change in the nature of 'ownership' of American industrial companies, that is in the holders, buyers, and sellers of their shares. Before World War II the majority of securities were held by relatively wealthy individuals and families. Even as late as 1952 only 4.2 per cent of the United States population held corporate securities – a figure which included owners of mutual funds.[19] The major institutional investors were insurance companies and trust departments of banks. Such institutional investors, like wealthy individuals, normally invested for the long-term – for growth and assets rather than current dividends.

After World War II, increasingly large amounts of the voting shares of American industrial enterprises were held in the portfolios of pension and mutual funds. These funds had their beginnings in the 1920s, but grew little in the depressed years of the 1930s. By the 1960s, however, they had come into their own. The success of the managers of these funds was measured by their ability to have the value (dividends and appreciation) of their portfolios outperform the Standard & Poor index of the value of 500 companies. To perform satisfactorily they had constantly to buy and sell securities – transactions made more on the basis of short-term performance than on long-term potential. As time passed these portfolio managers – the new owners of American industry – increasingly traded securities in large blocks of 10,000 shares or more.

As the number of such funds and the volume of the securities they individually traded increased, both block sales and the turnover of securities traded rose rapidly. The proportion of the volume of shares traded annually on the New York Stock Exchange to total shares listed grew from 12 per cent and 16 per cent in the early 1960s to over 50 per cent by the 1980s. Block trading accounted for only 3.1 per cent of total sales on the New York Stock Exchange in 1965. By 1985 it accounted for 51 per cent of sales. In those years, too, the volume of total transactions rose on the Exchange rose from close to half a billion shares annually in the early 1950s to three billion at the end of the decade and to 27.5 billion by 1985.[20]

The great increase in the total volume of transactions, the rise in the turnover rate, and the growth of block sales made possible still another new phenomenon – the coming of an institutionalised market for corporate control. For the first time individuals, groups, and companies could obtain control of well-established enterprises in industries in which the buyers had no previous connection simply by purchasing their shares on the stock exchange. Large blocks of stock were being traded regularly; and buyers had little difficulty in raising funds for these purchases from financial institutions and financiers.

Thus the diversification of the 1960s, the divestitures of the 1970s, the business of buying and selling corporations stimulated by the shift in ownership, and finally the coming of the market for corporate control greatly facilitated the ease in which the modern managerial enterprise could be restructured. Such firms could now be bought, sold, split up, and recombined in ways that would have been impossible before the acquisition wave of the 1960s.

By the mid-1970s the intensified competition which had led to a rejection of the logic behind the dynamic of growth demanded extensive re-investment in reshaping and rationalising product-specific facilities and skills if industries were to maintain and regain competitiveness. At the same time this deviation made necessary the restructuring of enterprises which had grown so large and unwieldy through unbridled diversification. But the return to the logic through restructuring of enterprises and of industries was now clearly affected by the desires of investment banks and other financial institutions to maintain the new and profitable business of buying and selling companies and the needs for pension and mutual fund managers to maintain the current value of their portfolios.

Competitive Performance since the 1960s

What impact did the new developments have on the competitive performance of industries which were central to economic growth and competition in modern industrial urban economies? What relationships did they have to the ability of the chemical and computer industries to retain their competitive capabilities; to the abilities of the automobile and lesser extent metal industries to restore theirs, and to the failure of such industries as semiconductors (so closely allied to computers) and machine tools (so closely allied to the machinery industry) to maintain theirs? Answers to these questions are particularly important, as all these industries faced the same external environment – inflation and oil shocks in the 1970s, rising costs of capital, the fluctuating dollar, and anti-trust and other government regulatory legislation.

The American computer industry remains strong and competitive. The major players have changed little in the past decade. Of the 20 largest producers of hardware in 1987, only two had been founded in the 1980s. One, Compaq (ranked 14) was the single successful challenger in existing sectors (in this case microcomputers). It announced in its first annual report a strategy of 'thinking of itself as a major company in its formative stage rather than a small company with big plans'. It has invested accordingly. The other, Sun Microsystems, number 20 in size (and like one smaller competitor, Apollo) followed the pattern of entrepreneurial start-ups in the past, developing a new architecture for a new market – in this case workstations.[21]

Business machinery firms still dominate mainframe production and have major positions in the other two major sectors of the industry:

Sperry Rand and Burroughs in 1986 merged to form UNISYS making it the second largest computer producer in the United States. The disappearance of the electronic companies suggests weaknesses of the highly diversified enterprise and of diversification into unrelated industries. GE, RCA, Ford with Philco, Xerox with SDS, by relying on profit centres and statistical cost controls, exited because they failed to put the resources into computer lines necessary to compete with the business machine companies and the few entrepreneurial firms which made first mover investments. On the other hand, Hewlett Packard, for 30 years a highly successful producer of electronic instruments, and even less diversified than the machinery firms, did make the investments necessary to become a major player in mini and microcomputers. In minicomputers, Digital has made a comeback through its VAX networking systems. The most important challenger, besides established foreign firms, is a venerable managerial enterprise from a related industry – AT&T with its UNIX operating system that permits portability of software across hardware of many different manufacturers.[22]

In 1987, American companies still enjoyed just under 60 per cent of the European market for mainframe and minicomputers, and just over 20 per cent of the Japanese. In Europe IBM's market share was 35 per cent, DEC's seven per cent, UNISYS' five per cent and Hewlett Packard's three per cent. In Japan IBM had 15 per cent, UNISYS three per cent, and NCR two per cent. In microcomputers Apple and IBM, together with NEC, accounted for 50 per cent of the world market. Except in some peripherals foreign competition in the United States remained limited.[23]

In semiconductors the story has been very different. This industry, which supplies critical components for telecommunications, factory automation, robotics, airspace, and production controls as well as for computers, was created in the United States. In the mid-1970s, the pioneering American firms held 60 per cent of the world market, 95 per cent of the domestic market, half the European market and a quarter of the Japanese. By 1987 their share of the world market share was reduced to 40 per cent, while the Japanese share had risen to 50 per cent. By then the United States had become a net importer, with the Japanese supplying 25 per cent of its market. The Japanese controlled over 80 per cent of the world's sales of dynamic random access memory (DRAMs) which had been invented by an American company, Intel. Intel, Motorola and Texas Instruments have moved into the most technically advanced sectors, producing particularly advanced microprocessors. Even here they are being challenged by the Japanese. IBM, now the only world class producer of semiconductors in the United

States, is working with the Defense Department through SEMATECH, a consortium of American companies, to try to save the industry.[24]

What happened? Again the diversified electronics firms – RCA and GE – with the greatest capabilities for production and continuing research pulled out, while Ford's takeover of Philco destroyed the potential there. More serious, however, was the failure of the pioneering firms to make the investments in production, distribution and management essential to become first movers. If IBM is the prototype of the giant managerial enterprise as first mover, surely the semiconductor companies in California's Silicon Valley epitomise entrepreneurial enterprise. Instead of making the long-term investments, creating the necessary organisational capabilities and continuing to reinvest, these entrepreneurial enterprises remained small or sold out, often to the Japanese. Repeatedly groups of engineers left their companies to start new ones. Both old and new failed to make the necessary long-term commitments.

In Japan, on the other hand, large established firms did make the investments needed to become first movers in the new industry and did develop the organisational capabilities that permitted them so quickly to destroy American competitive advantages. As an MIT study on American productivity notes: 'The rapidity of the Japanese advance and the American retreat and the emphasis of the Japanese on those sectors with the greatest potential for the future suggests that without dramatic structural changes, the decline of the US industry will not only continue but will accelerate'.[25] But if the experience of the entrepreneurial chemical, electrical, and machinery firms in Britain in the 1880s and 1890s provides any indication, such restructuring is difficult and the opportunity to regain competitiveness is fleeting.

In light machinery, the response to intensified competition varied. The experience of sewing machines and agricultural machinery contrasted sharply from that of business machines. In both the leading firms have been destroyed. In sewing machines the American industry's capabilities deteriorated when Singer, the dominant firm, diversified into machine tools and several defence-related industries in which it had few strong organisational capabilities. Soon it dropped out of the sewing machine business altogether. As defence demands fell off so did Singer's profits. In 1987 a takeover specialist, Paul A. Bilzern, financed by Shearson and T. Boone Pickens, obtained the company. He had sold off eight of the remaining 12 divisions before he was convicted of fraud and sued by the Federal Government for over $30 million.[26]

In agricultural and construction equipment (International Harvester had moved into the latter in the 1920s) American firms did better. John

Deere, Caterpillar, and other leading firms reinvested in improving product and process. International Harvester, however, was not dismembered by a corporate raider but by a highly touted business manager who came from Xerox with the largest salary yet offered a CEO in the United States. To increase shareholder value he concentrated on cutting costs, including a reduction of wages that led to a bitter strike. In the resulting sell-off in 1984 and 1985, American companies purchased the operating divisions of Harvester – Caterpillar acquired the Turbine Division, and Tenneco, a conglomerate, its agricultural equipment operations. As Tenneco already owned a long-established agricultural equipment enterprise, J.I. Case, it began to rationalise facilities and personnel in ways to regain competitive strength.[27]

In machine tools, on which American machinery, automobile, and other industries depend as much as does the computer industries on semiconductors, the story has relevant similarities to that of semiconductors. In both the pioneers failed to become first movers. The older industry had long been operated through small enterprises, many of which were in the 1960s still owned and managed by the founders' families. These firms had not made the investments necessary to exploit fully either the economies of scope, as had German machinery firms earlier in the century, nor to exploit the economies of scale, as the Japanese did after World War II. Conglomerates such as Textron and Houdaille moved in, consolidating many small firms. By 1982 85 per cent of American machine tool production was concentrated in 12 firms. But the conglomerates did not rationalise the consolidated facilities, as Tenneco has begun to do in farm machinery, or invest in new ones. Instead they used the firms as cash cows to generate income to be re-invested in other industries. When demand fell off in this cyclical business, they spun them off. As a result of this failure to restructure and re-invest, the United States share of world production dropped from 25 per cent in the mid-1960s to less than 10 per cent in 1986. More significant for an industry which, like semiconductors, remains critical to the productivity of the wide variety of other industries, was the fact that the United States imported 50 per cent of its machine tools in 1986, compared with four per cent in the mid-1960s.[28]

The post-1960s history of the motor vehicle industry remains one functional and strategic competition for market share. Diversification and mergers and acquisition have played only a small role. True, Ford's acquisition of Philco eliminated a potentially strong international electronics competitor. But the decline of the market share held by the American Big Three resulted largely from the ability of European and then Japanese firms to produce better products in terms of performance, price, and customer satisfaction, much as General Motors and Chrysler had done in competing with Ford and the smaller producers of middle-priced cars during the 1920s and the 1930s.

The new challengers in the United States and world markets were, of course, not small American entrepreneurial firms but established foreign managerial enterprises. Once their domestic markets had become large enough to assure a volume sufficient to reduce costs to a competitive level, these managerial firms began to move into the rich American market. American car makers, committed to high dividends and high wages, were slow to respond. By the 1980s, however, they were beginning to restructure their enterprises and their industries, improving product and process and their relationships with suppliers and dealers; and adjusting strategies and structures. So at present they are beginning to regain market share at home and abroad. According to the MIT's commission on productivity: 'The American-owned *firms* are now headed in the right direction, and the American based *industry* (including Japanese firms operating in the United States) is improving its international competitive position very rapidly'. Moreover the subsidiaries of General Motors and Ford were still strong competitors in Europe and Australia and all of the 'Big Three' had close links (strategic alliances) with Japanese firms.[29]

Until very recently, the venerable first movers in the electrical equipment industry, General Electric and Westinghouse, remained strong in their core products – systems generating and transforming electric power; electric motors, engines, components and other industrial products; and some long-established consumer appliances. While GE remains a world leader in the industry, in 1990 Westinghouse, which had disposed of its lighting division in 1986 to an American firm, sold off its electrical equipment and elevator divisions to Swiss companies. The proceeds of these sales were used to purchase businesses, largely in the service sector, where Westinghouse had not yet developed competitive capabilities. As its CEO, John C. Marous, explained to a reporter from the *Wall Street Journal*, his company was:

> boxed in by the rules of US capitalism. While European companies don't expect more than 12 per cent, he says, and the Japanese are even satisfied with 10 per cent or even as little as five per cent, if a product has a long lifecycle, American companies faced with a threat of takeover must do far better. 'Competition is tilted in favor of foreigners', declares Mr Marous, who has pushed Westinghouse to achieve a 22 per cent on equity last year.[30]

In this way pressure from the institutionalised market for corporate control pushed Westinghouse to abandon the long-term logic of industrial success – the logic which GE continued to follow by reinvesting heavily in those operating divisions in which it had the strongest competitive capabilities.

In consumer electronics – radio, television, and video equipment – the performance of the leaders and the smaller competitors has been uncommonly poor. Here over-diversification in the 1960s and 1970s appears to have been the culprit. GE and RCA became widely diversified and failed to concentrate resources on product development in consumer electronics; Philco and Admiral were acquired by firms (Ford and Rockwell, respectively) that had no experience in the industry. And Magnavox and Sylvania were purchased by the Dutch firm Philips. So by 1985 only 23 per cent of consumer electronic sales in the United States were for products made in American factories.[31]

Let me close this historical overview with a success story – that of the chemical industry, the industry that was hardest hit by the intensified competition of recent years. It remains one of the most significant generators of economic growth and transformation. In 1987 its US sales totalled $210 billion, as compared to auto sales of $125.6 billion. Its output of textiles far surpassed those produced by cotton, wool, and silk combined – products that had been the basis of powerful economies in the past. Its drug and pharmaceutical plants provided much of the world's medicine; its fertilizers had made possible the green revolution in many parts of the world; and its wide variety of other products had become essential in the production processes of its many and varied industries as those of the electrical and electronics industries. For a century the most research-intensive of all industries, its companies continued to expand by exploiting the economies of scope and entering markets related to their distinctive core production and research technologies. After World War II, American companies moved into Europe and European companies into the United States more than they had before 1939. Moreover, as the industry was dependent on oil for its basic raw materials, it suffered more than others from the sharp increase in oil prices in the 1970s.

As the leading managerial enterprises reshaped their own product lines and their organisational strategies, they restructured their industry. They narrowed their product lines, spinning off many of the commodity products, particularly petrochemicals, concentrated on expanding their output in existing higher value-added specialties and moving into new ones best fitted to their capabilities, including pharmaceuticals, biotechnical products and advanced materials. Thus, Dow's portion of commodities produced dropped from 63 per cent to 35 per cent in five years and Monsanto from 61 per cent to 35 per cent in four. As chemical companies reduced capacity much of petrochemical output was taken over by long-established oil companies. That is, the chemical companies moved into markets where they could utilise organisational capabilities developed to exploit economies of scope; and the oil companies into the petrochemicals where they could exploit capabilities based on understanding the economies of scale. Such restructuring based on long-term strategic plans involved heavy direct investment in new products and processes and the acquisition of pioneering firms in the growth areas as well as the divestiture of declining product lines. This restructuring was carried out almost wholly by the managerial enterprises that had long dominated their national industries – Bayer, BASF, and Hoechst in Germany; Ciba–Geigy in Switzerland; ICI in Britain; and in the United States Du Pont, Union Carbide, Dow, Monsanto (Allied Chemical, the most enthusiastic diversifier in the industry, is no longer a major player), and smaller, but still large, managerial enterprises such as Hercules, Rohm & Haas, and American Cyanamide. New start-up firms played almost no role; though a very few smaller firms were created to operate and occasionally consolidate the spun-off petrochemical activities. The United States remains an exporter of chemicals. Japanese firms have yet to become serious competitors in American or international markets.[32]

The Logic of Competitive Success and Failure

In the capital intensive industries, particularly those whose product and processes are technologically complex, the managerial enterprise has continued to dominate. (In this article I am speaking only of the capital-intensive industries that have been at the centre of growth and industrial competitiveness for the past century.) Such firms continued to grow by moving into new geographical and related product markets. Such growth continued to be based on the maintenance and improvement of product-specific facilities and skills whose activities were co-ordinated, monitored and planned by experienced full-time managers. And the test of such capabilities is their ability to compete functionally and strategically for market share.

The success and failure of American managers in competing for market share at home and abroad since the 1960s emphasises that those who ignore the logic of this dynamic do so, not necessarily at their own peril, but at the peril of the continuing long-term productivity and profitability of their enterprises, and of the industries and the national economies in which they operate. The failure of entrepreneurs to make the large long-term investments in manufacturing, marketing and management which are essential to create the capabilities needed to compete globally has meant that they and their enterprises lost out to those that did, both abroad and at home. This was as true of the entrepreneurs of Silicon Valley in semiconductors in the 1970s as it was of the entrepreneurs in Britain in chemicals, electrical equipment, machinery and metals in the 1880s and 1890s.

Similarly, the failure of managerial enterprises to improve their capabilities once created meant that they lost out in functional and strategic competition for market share to those that did. Just as General Motors and Chrysler took market share and profits from Ford by enhancing their organisational capabilities while Ford let its deteriorate, so too European and then Japanese automobile makers captured share and profit from the American 'Big Three' in the 1970s by improving their functional facilities and skills and by devising more effective long-term strategies for maintaining and gaining market share. And just as Ford regained its capabilities in the 1940s and 1950s, so too the Americans began to come back in the late 1980s.

The automobile story emphasizes that, while co-ordinated capabilities developed within the managerial enterprise are essential to competitive success, these managerial enterprises, like any human institution, can stagnate. Ford in the 1920s and the American 'Big Three' in the 1970s made wrong-headed decisions as to their markets, suppliers, dealers, and the activities of their competitors. In both cases, by improving process and product and restructuring their organizations, they were able to regain their capabilities and their competitive strength. The patterns of competition in automobiles have been much the same in nearly all capital-intensive and oligopolistic industries for the past century. Once established, a small number continued to dominate, with the market share and profitability changing constantly. Here the discipline of the market helped to enforce the logic of the dynamic of industrial growth.

More serious to the long-term health of enterprises and industries was the deliberate ignoring of that logic by managers who decided on a strategy of growth of acquiring companies in business in which they had little or no product-specific organizational capabilities that gave them a competitive edge. Such moves weakened the competitive strength of many American companies and industries. The American electrical and electronics companies had as great a potential for success in computers as did American machinery companies, and as great a potential for success in semiconductors and consumer electronics as did the large electrical and electronic companies in Europe and Japan. They failed in good part because these were only one of many product lines. So their top managers were unable to devote the time and resources necessary to compete effectively in computers, semiconductors, and consumer electronics. Nor did the top executives at Ford and Xerox have the capabilities to maintain the competitiveness of Philco and SDS. So, too, Singer's move away from its basic business was the beginning of its end. In comparable fashion, ITT, which had been since the 1920s a world-wide producer of telephone equipment was, after its diversification spree, out of that business. The conglomerates helped to bring down the machine tool industry. Finally, the diversification of automobile and machinery companies into unrelated industries made them much more vulnerable to the European and Japanese invasion of their market. By pulling back and concentrating on improving their functional capabilities, they are now beginning to regain competitive strength.

Ignoring the logic of industrial growth had even more far-reaching consequences than the destruction of the capabilities of a number of major American enterprises and industries. It led to changes in the capital markets that further encouraged inattention to the basic functions of managerial enterprises and to the maintenance of national competitive capabilities in global markets. The extraordinary number of acquisitions made in the late 1960s into unrelated and more distantly related industries, followed by a totally unprecedented number of divestitures in the early 1970s, suggest that many managers quickly realised the hazards of ignoring the logic. But it also made it clear that often more money was to be made in buying and selling companies than in operating them. Indeed, the new business turned many financial institutions, particularly investment banks, from carrying out what had been for almost a century their basic function, that of providing funds to supplement retained earnings in the reinvestment of facilities and skills essential to maintain competitive capabilities – a function that financial institutions in Japan and continental Europe continue to perform effectively. The new business, often personally as profitable to managers involved as to the financial institutions, was further encouraged by the new owners of American industry: the managers of portfolio and pension funds whose abilities were constantly tested by comparisons with their performance to the Standard & Poor indices. As time passed even the language of the financial community – such terms as 'bust-up takeovers', 'putting companies into play', and 'break-up value' – indicated that long-term investment was no longer the major concern of financial intermediaries. This trend away from the realities of global competition has been further stimulated by business schools and the business press. Just as in the 1960s the schools encouraged the hubris of American managers by teaching that those who learned the general principles of management need not be intimately concerned with its product-specific content; so the current discussion of shareholder value focuses on the obtaining of profit rather than on the product-specific capabilities necessary to achieve that profit – capabilities that differ considerably from industry to industry.

All this is not to say that the increased flexibility of the processes and products of the financial markets is not of significant value in restructuring American enterprises and industries so that they can regain or maintain their long-term competitive capabilities. The success of the chemical industry is a case in point. It is only to say that, as the experience of chemicals indicates, such flexibility is valuable only when capital is raised and businesses are bought and sold to enhance facilities and skills according to a carefully considered long-term strategy. Nor is this to say that conglomerates cannot play a significant role in maintaining and developing capabilities, as the case of Tenneco in agricultural implements suggests. Indeed, as long as the conglomerate operates a relatively small number of divisions and its full-time executives concentrate on maintaining those divisions' competitive capabilities, such executives can provide a more effective and more immediate discipline over managerial inertia than can the product markets. Nor is this to say that outside directors representing financial institutions or large stockholders do not have an important role in reviving stagnating companies whose capabilities have deteriorated, by bringing in outsiders, perhaps even from another industry, to turn the company around. The basic task of conglomerate managers, outside directors and a new CEO must, however, be to recruit managers who have the experience and skills essential to understand the enterprise's technologically complex products and processes, the intricacies of its many markets, and the activities of its competitors in these markets.

Individual financiers, managers and shareholders have often profited from ignoring the dynamics of managerial enterprises in capital-intensive industries, but the consequences of such actions have been serious to the long-term health of enterprises and industries involved. That logic has been ignored when managers and financiers view the assets of an enterprise as merely the value of existing facilities, and when they consider the employees and managers in terms of costs of wages and salaries instead of product-specific skills to be enhanced. The consequences can be particularly serious when deals involving the buying and selling of companies are based on such assumptions. It is ignored, too, when the goal of those involved in that buying and selling is the profit to be made from the transactions themselves rather than that made from the resulting improvements in the competitive capabilities of the enterprises involved in the transaction. The long-term consequences can be dangerous too when the transactions burden the enterprise involved with heavy debts whose interest reduces the funds essential for reinvestment in facilities and skills. They are serious too when the managers sacrifice funds needed to maintain and improve capabilities, to meet shareholder demands for higher dividends.

Why then should the weakening of organisational capabilities of managerial enterprises weaken the competitive strength of national industries and economies? The reason is that the development, production and distribution of goods for national and global markets must be a co-operative effort. It requires the carrying out of a wide variety of activities that in turn call for different facilities and skills. And only when these facilities and skills and the flow of goods through their processes of production and distribution are carefully co-ordinated can the activities be integrated in ways to reduce price, assure quality, and provide services essential to reach those markets. Such co-operative efforts are so profitable that if entrepreneurial enterprises fail to become managerial and managerial enterprises fail to maintain and nourish their competitive capabilities, they lose market share and profits to managerial enterprises from other nations and from related industries that do. At least that has been the experience in the industries that have done the most to transform the world since the coming of modern transportation and communication more than a century ago.

NOTES

This article was presented at the Business History Seminar at the Harvard Business School in September 1989. Very much reworked, it appeared as 'The Enduring Logic of Industrial Success', *Harvard Business Review*, Vol.90 (1990), pp.130–40. Because it was greatly shortened, because much of the basic data was deleted and because the data was not documented, it seemed worthwhile to have the original text published. Parts of this piece have been used in 'Learning and Technological Change: The Perspective from Business History', in R. Thomson (ed.) *Learning and Technological Change*, to be published by Macmillan, and in 'Competitive Performance of U.S. Industrial Enterprises: A Historical Perspective, 1880s–1990s' in M. Porter (ed.), *Time Horizons in American Industry*, to be published by the Harvard Business School Press. Both the title of the article and of the book are tentative.

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2. The following paragraphs are based on A.D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA, 1990), Ch.2.
3. For the British failure and German success in chemicals, pharmaceuticals, electrical equipment and other machinery and metals, see ibid., Ch.7 (particularly pp.274–86) and Ch.12 (particularly pp.463–86).
4. These two quotations are cited in ibid., p.476 from Carl Duisberg, 'Memorandum on the Construction and Organization of the Dye Works [Farben Fabriken], at Leverkusen', p.3 (Bayer Archives).

5. L.F. Haber, *The Chemical Industry, 1900–1930: International Growth and Technological Change* (Oxford, 1971), pp.121, 145, 179.
6. Chandler, *Scale and Scope*, Ch.6 for the dominance of US firms in light volume produced machinery.
7. M. Dertouzos *et al.*, *Made in America: Regaining the Competitive Edge* (Cambridge, MA, 1989), p.234.
8. Chandler, *Scale and Scope*, p.171. The collective history of the leaders of the US chemical industry in the inter-war years is told in ibid., pp.170–90.
9. Ibid., pp.205–8 for this paragraph and the next.
10. For information on computers, see K. Flamm, *Creating the Computer: Government, Industry and High Technology* (Washington, DC, 1987), Chs. 4–6 and for the history of individual companies, J. Cortada, *Historical Dictionary of Data Processing Organizations* (New York, 1987).
11. R. Sobel, *I.B.M.: Colossus in Transition* (New York, 1981), Ch.10.
12. *Datamation*, Vol.29 (1983), p.92.
13. Chandler, *Scale and Scope*, pp.611–12.
14. Flamm, *Creating the Computer*, pp.168, 201.
15. D.S. Ravenscraft and F.M. Scherer, *Mergers, Sell-offs, and Economic Efficiency* (Washington, D.C., 1987), Ch.6.
16. For extent of diversification see A.D. Chandler and R.S. Tedlow, *The Coming of Managerial Capitalism: A Casebook on the History of American Economic Institutions* (Homewood, IL, 1985), pp.765–75.
17. T. Johnson and R. Kaplan, *Relevance Lost: The Rise and Fall of Managerial Accounting* (Boston, MA, 1987). As the book points out 'contemporary cost accounting and management control systems . . . are no longer providing accurate signals about the efficiency and profitability of internally managed transactions . . . Without receipt of appropriate cost and profitability information, the availability of the "visible hand" to effectively manage the myriad of transactions that occur in a complex hierarchy has been severely compromised' Particularly useful are Ch.6, 'From Cost Management to Cost Accounting: Relevance Lost', and Ch 7, 'Cost Accounting and Decision Making: Academics Strive for Relevance'.
18. W.T. Grimm & Co., *Mergerstat Review, 1987* (Chicago, IL, 1988), pp.103–4
19. New York Stock Exchange, *Share Ownership, 1980* (New York, 1981), p.1.
20. New York Stock Exchange, *New York Stock Exchange Fact Book, 1987* (New York, 1987) pp.70–1.
21. This information is taken from *Datamation*, Vol.34 (1988), p.30.
22. Flamm, *Creating the Computer*, pp.17, 102–127.
23. Ibid., pp.168, 201.
24. Dertouzos *et al.*, *Made in America*, pp.248–61. The US has remained strong in microprocessing chips but recently a Japanese firm, Kubota, purchased 20 per cent of MIPS Computer Systems, the first merchant vendor to commercialize an advanced microprocessor chip for reduced-instruction-set computing (RISC). In return, MIPS shares its technology with Kubota; while Matsushita manufactures the devices (pp.259–60).
25. Ibid., p.251.
26. *New York Times*, 3 May 1989, p.D19; 28 Sept. 1989, p.D1.
27. Marsh, *A Corporate Tragedy: The Agony of International Harvester Company* (Garden City, NY, 1987). Describes in detail the disintegration of this great American firm. Particularly useful are Chs.11–17. Valuable too is an article comparing Deere to Harvester in *Sales and Management*, Vol.32 (1985), pp.30–3. For Tenneco see, besides annual reports, *New York Times* (30 Dec. 1990), pp.D3–4.
28. Dertouzos *et al.*, *Made in America*, pp.232–3; M. Holland, *When the Machine Stopped: A Cautionary Tale From Industrial America* (Boston, MA, 1989) provides a graphic account of the destruction of an innovating and well managed machine tool maker – Burgmaster Corporation.
29. Dertouzos *et al.*, *Made in America*, pp.171–87. The quotation is from p.187.

30. *Wall Street Journal*, 24 Jan. 1990, p.A4. For GE's continuing strength in the core lines see the company's annual report for 1989. This paragraph was revised after the completion of the original draft.
31. More detailed than Detouzos *et al.*, *Made in America*, pp.217–31 is 'The Decline of US Consumer Electronics Manufacturing: History, Hypothesis, and Realities', *The Working Papers of the MIT Commission on Industrial Productivity*, Vol.1, (Cambridge, MA, 1989), especially pp.15–21, 45.
32. As in the case of consumer electronics, the *Working Papers of the MIT, Commission*, Vol.1, 'The Transformation of the US Chemicals Industry' provides much more information on individual companies than does the summary volume *Made in America*. J.L. Bower, *When Markets Quake: The Management Challenge of Restructuring Industry* (Boston, MA, 1986), especially Chs.4–6 adds valuable information.

Corporate Strategy and Accounting Systems: A Comparison of Developments at Two British Steel Firms, 1898–1914

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Alfred D. Chandler Jr.'s comparative analysis of how organisational innovations within large-scale firms contributed to variations in international competitiveness has naturally encouraged accounting historians to investigate how new accounting systems played a supporting role in shaping corporate performance. Chandler's numerous references to new accounting methods that accompanied organisational change in the United States and H.T. Johnson's case studies of firms that pioneered systems designs have led many to suspect that British accounting practice, like organisational forms, probably lagged behind developments in the US.[1] However, we cannot confirm or refute the validity of this suspicion insofar as it relates to the pre-war era, when the relative decline of Britain's competitiveness coincided with salient administrative changes and the rise of oligopoly in US industry, because our knowledge of British and American accounting practice is drawn from different sources.

Scholars of British accounting between 1880 and 1914 have investigated the causality underlying the emergence and diffusion of new techniques using textbooks and the records of professional groups. The initial appearance of costing manuals in the 1880s led David Solomons to suggest that British management made little use of cost accounts for decision making until compelled do so by increasing competition.[2] S.P. Garner attributed the rise of specialist accounting literature to the growing capital intensity of industry which stimulated greater concern for costs.[3] More recently, Robert Locke has drawn attention to the absence in Britain of those professional and institutional links that played important roles in disseminating new cost concepts among managers, engineers and accountants in Germany and the US.[4]

Johnson and Kaplan's studies of innovative, and hence possibly unrepresentative, American firms between 1860 and 1920 revealed both a trend of cumulative sophistication in costing methods and systems design as well as lines of diffusion running from the railroads to steelmaking, explosives, and automobile manufacturing. Following Chandler they argue that differences in environmental conditions induced distinct patterns of corporate growth which in turn shaped national trends in systems development. Market and technological factors in the US exposed important economies that could be secured by internalising within the firm functions previously co-ordinated by markets. The resultant administrative complexity generated demand for improved accounting controls. With little firm evidence to support them, Johnson and Kaplan drew the inference that efficient market mechanisms in Britain encouraged persistent structural fragmentation and the proliferation of single-function firms that needed comparatively simple costing methods.[5]

Detailed case studies of British firms exist, but overwhelmingly they examine accounting practices during the Industrial Revolution era.[6] In a survey of these investigations, Edwards and Newell drew attention to an array of surprisingly advanced techniques, including some used by innovative American firms after 1900.[7] These sophisticated calculations were usually found in *ad hoc* reports used for decision making rather than in production ledgers. Edwards and Newell suggested that assessments of accounting expertise rely too much on evidence drawn from control records which are more likely to survive than special planning reports. The discovery of *ad hoc* calculations reveals that British businessmen used cost data to develop strategy long before 1880 and by implication undermines arguments that attribute innovations to a single factor, such as competition, capital intensity or internal organisation. Edwards and Newell suggested that accounting techniques arose in a contingent demand-induced manner in response to the diverse requirements of planning and control.

To develop an accurate basis for drawing international comparisons of accounting practice we need case studies of British firms from the pre-war era when technological change, the rise of scientific management and growing competition called for new types of strategic decisions. The present investigation examines the relationship between the strategies and accounting procedures as reflected in the planning reports and control systems of two British steel firms that operated within the same environment, shared a common pool of accounting expertise, and yet developed different policies. South Durham Steel and Iron (SDS) followed a passive strategy based on horizontal merger, while Cargo Fleet Iron (CFI) initiated a bold course of process integration designed to change industrial structure. These Northern steel firms pursued their divergent strategies at the same time that du Pont made its pioneering accounting innovations.

The first section below traces the relationship between strategy and systems development in single- and multi-function American firms before 1914 in order to establish the comparative context needed to assess the procedures employed by SDS and CFI. The second part of the study describes the features of the subject companies' environment: market conditions, technological changes and shifts in the organisation of the Northern steel industry. The last two sections analyse the systems and strategies employed by SDS and CFI.

I

In the 1850s and 1860s, single-function American textile firms, like Lyman Mills, employed 'conversion cost' accounting to calculate input costs (labour and materials) in terms of a unit of output (yards or pounds).[8] By measuring the expense of transforming material into finished products, 'conversion cost' methods enabled management to monitor production efficiency, but Johnson reports that the firm did not use this data to make pricing decisions, to evaluate alternative production policies, to assess new technology or to inform other strategic decisions. As a price taking firm, Lymans sought to improve the efficiency of its internal operations, rather than challenge external conditions.[9]

In contrast, Andrew Carnegie used his elaborate cost system which, following railroad technique focused mainly on prime costs and excluded overheads, to formulate an innovative strategy through which he exerted a dynamic influence on his business environment.[10] After 1870, Carnegie based prices on costs, a practice which was central to his policy of capturing market share by paring expenses and running his mills at capacity. By employing his system to assess the cost impact of different input mixes and process and product improvements, the steelmaker was able to perfect the mass production techniques which later served as a foundation for extending his control over purchasing and sales functions and inducing broader structural change in the industry.[11]

Carnegie's capital accounting methods were also based on railway practice. Like the Pennsylvania Railroad, he used 'renewal' methods, that is he charged repairs and maintenance to the operating account and did not treat depreciation in a systematic fashion.[12] As a result, profits, capital consumption and asset values were understated. These practices did not impair Carnegie's strategy which focused on reducing prime costs.

The scientific management movement developed new concepts that helped to extend and refine internal accounting controls. Frederick

Taylor sought to improve process efficiency by developing standard rates based on 'best practice' labour and material usage and by implementing more accurate statistical process controls.[13] Alexander Hamilton Church extended these innovations to costing to devise ways of assessing not just process efficiency, but overall *commercial* efficiency. By breaking down costs more rigorously and by determining indirect shop charges, overheads and selling expenses for individual products, rather than averaging these costs over all types of output, Church helped to link product cost information more precisely to profit and loss.[14] These practices also enabled management to set prices more accurately and thereby improve the precision of product strategies. Church and Henry Gantt also devised ways to calculate standard costs from a given percentage of capacity utilisation in order to relate fluctuations in unit costs to variations in throughput.[15] With this *corpus* of techniques firms could develop comprehensive product strategies to win higher levels of capacity utilisation and economies of scope.

The du Pont cousins learned of these new costing techniques from their contacts with steel firms that had been advised by Taylor.[16] They applied these methods and devised other systems innovations to pursue a strategy similar to that of Carnegie: run the mills full to achieve low costs needed to win a large and stable market share. However, the cousins sought to attain these objectives by rationalising plants following horizontal merger while simultaneously extending functional controls. To develop multi-function capabilities within a multi-product operation the du Ponts made strategic and tactical decisions that required new types of accounting information.

At the strategic level, the cousins had to decide how much capital to allocate to individual functional departments and to ascertain whether retained profits or outside funds would be used to support growth. Their methods were also conditioned by the need to service debt incurred in financing the purchase of the family firm. Therefore, in capital accounting they abandoned the 'renewal' method and devised methods of providing for the addition and removal of plant and then used a consistent method for treating depreciation in order to establish a more accurate value for the firm's assets.[17] This made it possible to express earnings as a percentage of investment (ROI), to assess alternative allocative proposals in uniform terms, to monitor coverage of interest costs, and to evaluate the efficiency of *capital* utilisation. The cousins drew up estimates of monthly spending and compared these with net earnings forecasts developed from sales projections in order to control capital spending and to evaluate the merit of using additional external finance.

At the tactical level, the du Ponts devised separate bases for evaluating and controlling functional activities: ROI for manufacturing, pre-set targets for sales, and purchasing limits established by sales forecasts. In production they rationalised plants and set product policies by compiling costs for each mill and product in a more rigorous way than Carnegie by assigning overheads, depreciation, and selling and purchasing expenses for each unit of output and across the product range.[18] In time, these unit cost figures were compared to a pre-set basis that was calculated from a standard operating volume (percentage of capacity utilisation). In sales, management used a 15 per cent ROI target to set price and volume guidelines for branch offices and products. Sales and manufacturing were integrated through the use of monthly sales forecasts and daily reports from the branches. After 1907, du Pont dovetailed purchasing with manufacturing and sales by establishing stock limits set by monthly sales forecasts. The system that arose from these strategic and tactical decisions represented an integrated accounting infrastructure that enabled management to win sustainable economies of scale and scope within a multi-function, multi-product enterprise and thereby transform the structure of the American explosives industry.

II

By the 1860s the North East Coast district had established world leadership in iron production by developing new blast furnace technology and exploiting the abundant but low quality ores of Cleveland.[19] The rapid growth of the 1860s produced some large firms, notably Bell Brothers and Bolckow Vaughan, but these concerns co-existed with numerous small-scale operators. The subsequent rise of bessemer steelmaking supported, new entry thereby fragmenting the industry further. After 1880 shifts in technology and demand conditions did not induce structural change.

Demand for the region's traditional product – rails – grew more slowly after 1880. However, the expansion of shipbuilding and engineering called for increased output of plates and angles and thereby helped to sustain a moderate rate of growth throughout the Northern steel industry. (In 1990 the North still accounted for 29 per cent of the UK's total steel output.) The new basis of demand also protected the region's steelmakers from direct competition with American and German imports which won a permanent position in Britain during the late 1890s. Thus, neither imports nor abrupt shifts in the regional market disturbed the industry's structure.

The gradual alteration in local demand also required a change in steelmaking process, but the timing of developments in related equipment prevented this technological shift from inducing greater concentration. Large-scale rail manufacturing had been based on the Bessemer system, but for quality and metallurgical reasons plate making involved the adoption of the acid open-hearth process. However, the change in technique took place *before* the invention of ancilliary equipment which supported the integration of hematite iron production and acid open-hearth steelmaking. In the absence of economies of process integration, the expansion of the open-hearth sector caused a proliferation of blast furnace operators who smelted imported hematite ores, unintegrated acid open-hearth steel makers and rerollers.

While these trends in technological development limited the extent to which firms could emulate the first phase of Carnegie's strategy by perfecting mass-production through process integration, existing commercial practices prevented them from following the second stage of the American steelmaker's strategy – developing functional co-ordination. These market-related impediments included price-fixing organisations, close delivery or quality-based ties between existing producers and their large customers, the entrenched intermediary position that merchants occupied between manufacturers and small clients, and the established custom whereby consumers of steel placed orders to secure price but submitted size specifications only when they required delivery. These practices and the state of steelmaking technology supported the continued existence of an industrial structure that consisted of large and small single-function firms.

At the turn of the century, the technological basis of the open-hearth sector was radically transformed by Benjamin Talbot's invention of a continuous basic process. The Talbot system made it commercially possible to refine iron made from the cheap,.low quality ore of the North and to employ the ancilliary equipment that American's had developed during the 1890s to secure economies of process integration. Thus, a window of opportunity appeared for firms to adopt innovative mass-production strategies that might induce structural change. However, the number of companies that could respond to the technological shift was limited by the ownership of local ore deposits, existing plant configurations, and the financial strength of individual enterprises.

In 1900, two of the region's three large firms possessed the best ores. One of these, Dorman Long & Co., purchased Bells in 1899 to secure ore needed for basic open-hearth steelmaking. However, the firm failed to rationalise its collection of plant and duplicated modernisation schemes produced inconclusive results. Dorman's manufactured both acid and basic steel for the rail and angle sectors of the market. Bolckow Vaughan also owned local ore but had a heavy investment in Bessemer technology. During the 1890s, piecemeal modernisation created an unbalanced plant that made angles, rails and a small quantity of plate. The third major regional producer, Consett Iron, did not own local ore mines and did not venture into basic open-hearth production. Instead, this firm imported hematite ore to manufacture acid steel plates. Behind these three major firms trailed a large number of small unintegrated operators, and from their ranks emerged the two companies that form of the subject of this study.

Two Northern shipbuilders, Sir William Gray and Sir Christopher Furness (later Lord) independently acquired CFI and the constituent parts of SDS in order to implement divergent strategies in response to opportunities exposed by Talbot's system and the fragmented structure of the local industry. Gray formed SDS in 1898 to execute a policy of horizontal combination which was designed to fulfill two objectives. First, Sir William combined his son's plate mill with two others in order to protect his family's investment by reducing local competition which undermined the stability of the regional price-fixing association. Second, as a customer who paid regulated prices, Gray sought to participate on a larger basis in suppliers' profits which he hoped to enhance by closing one plant to concentrate production during periods of slack demand and by gradually modernising SDS' facilities to cut costs. Each of SDS's plants operated acid open-hearth steel furnaces and plate mills: none possessed blast furnaces or mines. At 300,000 tons p.a., SDS's finishing capacity was about the same as Consett's, the North's other specialised platemaker, but larger than Bolkow's. In 1900, Gray strengthened his firm's commercial position by joining forces with Furness, and together they floated SDS as a public company.

Before this, Furness had been supporting the growth of his shipping and shipbuilding operations by acquiring coalmines, engineering works, and another steel firm.[20] This latter company, the Weardale Steel Coal and Coke Co., was a collection of unbalanced assets: large coal mines, small iron and steel making facilities, and a mill that rolled a small tonnage of boiler plates of acid steel. Weardale's future viability as a steel producer was undermined by its inland location. To remedy this disadvantage the firm bought CFI in 1900. CFI's obsolete blast furnaces occupied an ideal coastal site where Furness planned to build a fully integrated plant that incorporated Talbot's system. The new plant, which could make 125,000 tons p.a., would be supplied by CFI's iron mine and Weardale's collieries, while the latter firm's mill would be moved to the new site to undertake large-scale ship plate production.

Thus, SDS and CFI developed divergent strategies in light of their environment and resource sets. CFI sought to confront those conditions that hindered mass-production: SDS pursued horizontal growth and a cost cutting policy. (These strategies also set the two firms on a collision course in the plate market, but conflict was averted in 1904 by an exchange of shares and CFI's abandonment of plate making in favour of angle production.) The challenge facing the management of these firms was to devise systems tailored to the requirements of their distinct policies.

III

To carry out its horizontal strategy SDS needed a system that supported rapid adjustment to abrupt shifts in short-term conditions. 'Responsive' capability was important for two reasons. First, being derived from a capital goods industry, demand for ship plates was volatile, and the price of inputs, especially hematite iron, fluctuated widely. Second, Gray and Furness expected SDS to contend with these conditions without further financial assistance because they needed their private resources to support other rapidly growing businesses. In light of these considerations, this section examines the accounting expertise reflected in (1) the system that SDS used to monitor transaction flows, production, and liquidity and (2) special planning reports.

SDS's strategy did not require a system that supported rigorous functional co-ordination. The shipbuilders guaranteed the firm a sizeable share of the local market, and they did not plan to attack the prices set by the Plate Makers' Association (PMA) or to undertake direct selling.[21] Therefore, unlike du Pont, which did confront a price-fixing association, SDS did not need to establish either a sales organisation or a system that integrated sales and manufacturing. The technological divisibilities of acid open-hearth steelmaking did not generate significant economies that could be won by exerting systematic co-ordination over the flow of inputs to the steel furnaces. Nor did SDS have to integrate backwards in response to supply threats. Thus, the shipbuilders did not plan to modify existing competitive relations and lines of input distribution, and SDS remained a single-function horizontal combine that monitored, but could not internalise, transactional flows between manufacturing, sales, and supply.

To provide this monitoring function for SDS's three plants, Furness and Gray formed a centralised organisation managed by C.J. Bagley.[22] The new manager watched two sets of statistics to evaluate the likely impact of changing demand on production. First, he gained an overall view of market trends from Lloyd's weekly list of ships building in the UK.[23] This data was not used to set sales targets of the type that du Pont developed from ROI objectives because, as long as it was a member of the PMA, SDS could not influence its share of the market. Second, Bagley monitored the size of SDS's Order Book, that is the tonnage of sales recorded, and he divided this aggregate figure by the mills' annual capacity to compute how many months work the firm had available. However, this gave him only a rough indication of when he might have to close a plant to run the others at peak levels. Order Book size reflected the duration of *potential* full capacity operations, the *actual* number of months that SDS could run full depended on specification flows which the firm could not control.[24]

SDS did not tie purchasing to sales using formal administrative means of the type employed by du Pont. While the cousins set a fixed ratio of stock levels to forecasted sales, Bagley bought inputs under the supervision of the Board which shifted price and quantity guidelines at irregular intervals as demand and material prices changed.[25] SDS's procedures reflected both its inability to influence and thereby forecast sales and its owners' desire to monitor liquidity directly. Developing the capacity to respond to shifts in the firm's cash position made sense given lags between orders and specifications. The Board usually bought inputs when sales were booked, rather than when specifications came in, so that material costs were related directly to selling prices and the firm was insulated from the effects of fluctuating iron prices. However, this meant that the firm carried material which could not be processed immediately.[26] These circumstances made it impossible for the Board to build safeguards and delegate purchasing in the same way that the du Ponts did in order to manage financial resources systematically. Instead, SDS tailored its system to give the owners flexibility and hands-on control.

With data on purchases and sales, Bagley made rough estimates of future profits by subtracting material and production costs from average unit plate prices and multiplying by each operating mill's capacity.[27] SDS's records contain no profit or cost projections based on different levels of throughput. Even though estimates using standard rates have been found before 1800, Bagley employed full running as the basis for both routine and special reports because the owners shut mills to concentrate output during slumps. There was no compelling reason to monitor the relationship between volume and profits more precisely. Bagley's method of calculation reflects the responsive rather than anticipatory character of the firm's policy.

SDS used a production cost control system devised by W.B. Peat, a well-known professional accountant. The works submitted uniform weekly cost reports which recorded the cost of each manufacturing stage and each product for all three plants.[28] These data were compiled within the 'Analysis of Accounts' which management used for production and product decisions as well as for identifying areas of excessive cost.

The format of the Analysis was designed to facilitate the comparison of works' performance according to each process and product, rather than assessment of cost variations and operating ratios along a vertical production flow. Separate folios were devoted to costs incurred according to each product and manufacturing stage with expense items listed side by side for each plant. Thus, the cost of labour in steelmaking at each works could be compared at a glance whereas determining the relationship between steelmaking expenses and final product cost involved consulting six different folios. The Analysis did not record the volume of plant output because SDS did not operate fully integrated works which required close monitoring of the links between costs and volume. (For special reports Bagley consulted the Auditors' records which listed volume according to product and plant.)[29] In keeping with overall firm strategy, the Analysis was orientated toward comparing plant performance rather than evaluating the continuity of operations.

Within each folio, unit costs were broken down according to materials, labour, salaries, 'general charges' and repairs. The overhead items were computed by dividing a lump sum by aggregate output. Depreciation was not accounted for in the ledger. The inclusion of overheads was a departure from Carnegie's single-minded focus on prime costs, but the form of calculation and the omission of depreciation left SDS behind du Pont's standards.

The design of the Analysis and the information it included show that this ledger was intended to supply management with cost data for short-term decisions. It was not set up to support a long-term strategy like du Pont's, which pursued economies of scale through post-merger rationalisation. By excluding asset values and depreciation, the ledger did not treat individual plants as profit centres for which ROI could be used to inform decisions concerning which works to close permanently and where to concentrate investment. Since Furness used ROI to allocate investment among his shipping lines, SDS's officials were probably aware of the calculation, but did not employ it because their policy was to close a plant *temporarily* during recessions in order to concentrate production, lower costs, and win high profit margins by running the remaining facilities at capacity.[30] When specification submissions increased and intensified competition over delivery time during booms, the manager reactivated idle plant.[31] The Analysis' comparative data concerning prime costs and overheads helped Bagley to cope with fluctuating demand.[32]

The Analysis also provided a rough guide for product decisions, but SDS's strategy was not intended to achieve economies of scope; instead over time management reduced the range of the firm's product line. While depreciation and overheads were not allocated systematically to specific products, Bagley was able in a rough way to determine profits on intermediary processes, to decide when to concentrate production of subsidiary products, when to discontinue making specific items, and to formulate make or buy decisions.[33] Since these concerns were secondary to SDS's main priority and since prices were not based on costs, but rather set by Makers' Associations, improving the accuracy of the statistics to inform long-term decisions was not vital. Thus, as an instrument of production control, the Analysis was not intended to help SDS capture economies of scale or scope over the long-term.

SDS's capital accounting procedures and investment strategies reflected the same short-term orientation. Like many American and British firms in the late 1800s, SDS employed the 'renewal' method of capital accounting. Thus, Gray and Furness established an initial value for the firm's assets when they promoted SDS, and each year they added amounts spent on new equipment. The 'Summary of Capital Expenditure' recorded separately the value of new assets included at each of the three plants during the course of the financial year.[34] These data were summed and added to the total asset figure recorded in the balance sheet. The Directors then deducted depreciation, but only from the aggregated balance sheet figure not from the plant-level sums. Moreover, the amount of depreciation was not established by any systematic method. Rather, the Board allocated a round figure the size of which fluctuated according to annual profit levels.[35] These procedures made it clearly impossible to treat the works as independent profit centres, to determine precise asset values, and to use accurate ROI figures for each facility or the firm as a whole as a basis for rationalisation decisions. However, these were not vital considerations given the owners' strategy and their desire to preserve liquidity.

In keeping with its short-term orientation, the Board's main priority in allocating new investment was to commit funds to projects that would reduce operating expenses enough to recover their cost in one year.[36] Gray and Furness did not set a target profit margin towards which to direct these cost reducing investment decisions because they did not intend to concentrate fund allocation. Instead, using comparative data from the Analysis to identify areas of excessive cost the Board committed investment primarily to the two most modern facilities, but continued to siphon off funds to the Moor works to keep them operational so that SDS could compete on delivery during booms. Over time, SDS developed a 'flat-bottomed' cost curve to contend with fluctuating demand.

The short-term focus of investment policy is also reflected in the way in which the Directors determined the amount of spending. The Board sanctioned expenditure on an annual basis as profits allowed: in good years large sums were allocated, in poor years spending fell. With investment linked closely to fluctuating trade conditions, SDS's current prosperity determined its long-term profitability.[37] Only once during the 1898–1914 period – when the Directors authorised the construction of new steel furnaces – did the firm issue fresh capital (£100,000), and even then the additional funds were intended to supplement retained earnings.[38] Even though the absence of appropriate data for assessing investment proposals in precise ROI terms meant that decision makers lacked the means to evaluate the costs and benefits of using retained earnings or external finance to support SDS's long-term development, it was clearly their intention to keep SDS on a self-financing basis and as a result their attention was focused on short-term operating and profitability considerations.

SDS's investment horizon did not create demand for an accounting system that supported long-term planning capability. Annual improvement projects were small in scale, short in duration, and were carried out while the works were operating. As a result, there was little need for a formal capital budgeting and expenditure control system. Cost over runs sometimes occurred, but they were small and could be covered by overdraft borrowing or, after 1910, by reducing SDS's substantial cash surplus. The possibility of a serious working capital crisis arising from projects that involved relatively small sums (£20–30,000) was quite slim.[39] Bagley made rough comparisons of anticipated and actual cost savings arising from specific plant alterations, but with such a wide variety of projects there was no obvious way in which this exercise could be used to improve the accuracy of future planning. In short, the incremental, rather than fundamental nature of plant additions and the small amounts of capital involved created little need for an accounting infrastructure that could increase the efficiency of capital resource utilisation.

Between 1898 and 1914, the Board considered only two major proposals. Details concerning the construction of two Talbot furnaces have not survived, but estimates for a larger and more important project – the building of coke and iron making plant needed to adopt full-scale basic open-hearth steelmaking – reveals the accounting context within which SDS evaluated strategic options. Ben Talbot, CFI's Manager and the inventor of the continuous process, furnished SDS with these figures:[40]

Total cost of coke ovens, blast furnaces and conversion to basic practice	£700,000
Savings (£0.75 per ton at 175,000 tons p.a.)	131,250
Less depreciation at 7.5 per cent	37,000
[rounded to]	94,000
Add saving of £0.25 per ton on the use of cheaper ores	43,750
Total annual reduction in cost	127,750

(Investment recovered in 6 years after allowing for depreciation.)

The Directors evaluated the project in the same terms – pay back period – that they used to assess short-term investment plans. Their attention continued to be focused on liquidity and short-term cost reduction. With this data the Board could have calculated ROI (18 per cent), but given its emphasis on self-financing there was little need to do so in order to assess the viability of external financing.[41] Moreover, at this time the firm did not possess the resource set to implement the proposal. Lacking a mine and intimidated by the project's large cost, which would have increased well beyond the initial estimates if SDS purchased the ore supplies needed to implement the scheme, the Board retained its original strategy of incremental improvements until World War I brought tax incentives that facilitated internal financing.[42]

In conclusion, SDS's owners remained committed to a conservative policy, and their system was overwhelmingly orientated toward short-term concerns. SDS's routine cost accounts went beyond Carnegie's preoccupation with prime costs, but they fell short of the sophistication of du Pont's integrated system. Special reports seldom arose in response to questions of a fundamental strategic nature, and the answers provided, though imprecise in comparison with those obtained by du Pont, were adequate in terms of the owners' objectives. With no change in strategy there was no need to alter the format of SDS's control systems or to improve the accuracy of the data used in special reports.

As it stood, the firm's strategy was the exact opposite of that pursued by Carnegie and du Pont. Instead of trying to win scale advantages that would generate the large and stable market share needed for full running, while leaving competitors to cope with swings in demand, SDS absorbed the impact of market fluctuations itself. Firm-specific factors (an inappropriate resource set and a conservative financial strategy) and objective circumstances (technological divisibilities and market conditions that impeded the extension of functional controls) shaped this strategy. Yet, SDS's heavily depreciated plant and flat-bottomed cost curve, enabled it to cope with its cyclical market. Financing major additions with outside funds, especially debt, would have reduced its responsive capability. While Gray and Furness pursued a policy that was not adventurous, it was lucrative: SDS was Britain's second most profitable steel firm in the pre-war era.[43]

IV

In contrast to SDS's responsive horizontal policy, CFI devised an aggressive first-mover assault aimed at breaking those constraints that hindered the mass-production of open-hearth steel. Its owners believed that CFI possessed the resource set required to become an ultra-efficient single-product (plate) firm that could cut prices, run at full capacity, and let rivals cope with fluctuating demand. Thus, they sought to replicate the first stage of Carnegie's strategy by securing scale economies through process integration.

Carrying out this innovative policy required special planning reports and, given the radical extension of CFI's production facilities, a new comprehensive control system. To *formulate* strategy, CFI's Board needed reports that furnished accurate estimates of their firm's production costs and information about competitors' expenses.[44] These figures would provide a basis for anticipating the effect that CFI's competition would have on regional prices and, in turn, its own profit margins. The planners also needed precise estimates concerning the cost of building a balanced facility capable of achieving optimal scale economies.

To *execute* their scheme CFI's owners had to establish a system that differed markedly from SDS's. CFI required an infrastructure that would enable the management to exercise close control over works branches that carried out a series of vertically related processes, rather than to compare costs incurred at similar plants. Initially, CFI needed an organisational structure which delineated areas of authority from which accounting data for planning and control purposes would flow upwards to the chief decision-makers.[45] The links between organisation and systems were particularly important because, unlike SDS which took over commercially viable facilities, CFI had to build a brand new plant and, therefore, required budgeting and expenditure controls and strong works-level planning capabilities.

In terms of functional controls, it was initially necessary for CFI's executives – unlike their counterparts at SDS – to develop accounting procedures that could link part of the supply area with manufacturing. Management needed to set up a system that would co-ordinate the Liverton iron mine's activities with the operations of the new plant.

However, since CFI did not own a coal mine, it did not need to extend its backward functional controls further. To achieve the firm's initial goal – perfecting mass-production – its planners did not require accounting systems that would co-ordinate production and sales. The firm could rely on custom from Furness's yards to absorb its annual make (125,000 tons). However, if CFI's owners intended to expand the firm's market share further and confront remaining constraints facing British steelmakers – manufacturers' associations, close producer–customer ties, and fragmented order and specification flows – CFI would have to modify both its organisational structure and systems to support direct selling and to co-ordinate sales, purchasing, and production.

E.L. Pease (CFI's first Chairman) drew up the initial planning reports.[46] He projected an annual capacity of 125,000 tons of plate at a cost of 77 s. per ton. At the current market price, which he erroneously expected to remain the same, Pease anticipated a profit margin of £1 per ton. The works would cost £400,000. While the projections included rough depreciation estimates (see below), the managers did not use ROI (31 per cent) to assess the viability of the project, because they were not considering alternative schemes and did not plan to use outside capital. CFI's parent, Weardale Steel, would finance the new plant.

In keeping with the integrated nature of CFI's operations, Pease developed his production cost estimates in a cumulative fashion by first computing the cost of winning ore from Liverton and then projecting this fundamental expense through the entire sequence of manufacturing. This serial calculation also included estimates (based on definite offers) for coal and other materials. The costs at each stage from coking to rolling were compiled from material conversion ratios provided by equipment makers and other steel firms. Unlike the standard rates used in US industry, CFI's ratios were based on full capacity operations. Given the firm's strategy, using this rate of utilisation for estimating made sense, but it was projected through the production sequence only as far as steel making: plate rolling was not included. The omission is telling: it reveals that management did not confront the imbalance that it was planning into the works. The capacity of Weardale's mill was twice that of the rest of the plant.

Pease's estimates provided for overheads and depreciation but did not do so in a systematic manner. The report used a variety of bases for calculating overheads, perhaps following the sources of information available.[47] Depreciation was allocated directly to coking alone because the ovens were subject to heavy wear. For the other departments Pease arbitrarily set rounded sums for depreciation and after dividing these figures by full capacity output, he added the result to the total unit costs.

Thus, rather than factoring depreciation directly into unit costs like du Pont, CFI's planner adhered to the 'renewal' method and 'tacked on' this expense to final unit costs to determine a net profit margin. Though imprecise by standards set by Du Pont, this practice was more advanced than that of Carnegie and it suited the basis of CFI's strategy given the expectation that the firm's costs would establish regional prices. Whereas SDS adhered to PMA prices and exhibited a short-term perspective, CFI had a longer-run policy.

Pease's capital cost estimates and spending controls showed serious weaknesses. Capital costs were broken down according to equipment type and works department.[48] These estimates also included amounts paid up to November 1902, and a schedule of anticipated monthly payments running from November 1902 to January 1904. However, the schedule did not cross-reference payments on specific plant components with amounts falling due each month, so that management could not monitor construction in direct relation to expenditure. Ominously, there was no comparison of estimated and actual payments for the 1 November 1902 to February 1903 period revealing a four month gap in reporting.

Overall, Pease's plan supported the formulation of an innovative strategy because it traced production costs cumulatively through the entire manufacturing sequence and because it provided comparative data drawn from other firms for every department except mining and ironmaking. While the estimates were based on full capacity operations (with the exception of rolling) this assumption was logical given the intention to run full and cut prices. Thus, the sponsors of the project could obtain an immediate grasp of the scale economies which formed the central objective of their strategy. For nearly every stage of production, they could also ascertain the resultant competitive advantage that the plant would win over rivals.

Nevertheless, the projections exhibited serious limitations. First, the estimates were based on an unbalanced plant, and the addition of the upstream equipment needed to round out the works would have radically changed the scope of the project.[49] Second, Pease's estimates were based on the assumption that each week the Liverton Mine could produce 7,000 tons of ore containing 37 per cent iron at a cost of 6s. per ton, but he did not consider the effects of deviations from these parameters. Third, with his attention captivated by a unique opportunity to win extraordinarily low costs, Pease developed a rigid production plan by building his projections from the 'bottom up' to arrive at a maximum profit margin. In contrast, du Pont began with a financial target, based on ROI criteria because they had to service their capital, and then worked backwards. Since CFI's owners used internal funds, they did not have to be concerned with ROI. But given its basic strategy the firm needed some sort of profit objective that took into account competitors' pricing reactions. In short, Pease did not transform his production plan into a commercial scheme. Finally, Pease's capital spending and control arrangements exhibited serious defects, and he did not include contingencies for cost overruns or equipment changes.

As they stood, CFI's cost estimates rested on two critical assumptions. Over the long-term Liverton could meet cost, quality and output targets. Further, the estimates assumed full capacity operations. The effects of deviations from these two conditions on down stream activities were not considered.

Soon after development began on the basis of Pease's estimates, it became apparent that CFI's existing organisational structure and accounting procedures could not control capital spending. By October 1903, CFI had almost exhausted Weardale's reserves. In response to this problem, doubts about the viability of producing plates and lingering concern about Liverton's potential, Furness appointed a 'Committee of Experts', drawn from CFI, Weardale, and SDS, to re-examine the entire project.

The Experts drew up another comprehensive planning report which concurred largely with Pease's estimate of production expenses but revised construction costs upward by 16 per cent.[50] Including earlier escalations, capital costs amounted to twice the initial £400,000, but the causes of the over run cannot be traced because Pease and the Experts used different categories for compiling equipment costs. The Committee also recommended that CFI abandon plate making in favour of sections, so that the firm would manufacture products that complemented rather than competed with those of SDS. This shift in policy required a different rolling plant and raised costs by a further £184,000. Perhaps following the parameters laid down in the original scheme, the Experts planned for a section mill that had the same capacity (5,000 tons per week) as Weardale's plate mill. As a result the imbalance in CFI's plant was not corrected.

The Committee's report recomputed past spending and total estimated expenditure needed to complete the works. However, since it did not include a schedule of anticipated monthly payments cross-referenced with specific plant components, the report did not correct those defects in CFI's capital spending controls that prevented executives from monitoring construction in direct relation to expenditure. This problem was remedied – ten months later – when an 'Approximate Statement of Payments' was drawn up, but the equipment categories used were not the same as those in the earlier reports.[51] Thus, CFI's capital cost projections resemble a series of independent estimates which displayed no continuity. The inconsistent methods of calculation prevented management from identifying reasons for inaccuracies and ensuring that errors were not repeated.

In 1904–5, the Board discovered further mistakes, the correction of which increased building costs further. In response CFI departed from its earlier policy and borrowed heavily from outside sources.[52] Debt servicing raised the firm's fixed costs and eroded its competitive advantages relative to competitors who operated heavily depreciated plant. (In contrast Carnegie was able to control spending and could therefore continue to use internal funds; this policy strengthened his position in the 1890s when he faced over capitalised rivals.)[53] While CFI's owners recognised the danger of growing debt, the costing system that they initially designed did not quantify the consequences in terms of unit costs and prices.[54] The du Ponts exchanged bonds for the family firm and therefore devised a system that accounted for the cost of capital, while Carnegie did not need such a framework as long as he eschewed borrowing and retained his prime cost advantage. CFI did not adjust its system to accommodate its new financial policy.

CFI's anticipated production cost advantage did not materilise after manufacturing began in 1906. Recognition of the reasons was not hindered by defects in the firm's production cost controls but rather by the way in which they were used before Benjamin Talbot became Manager in 1907. Earlier management did not use the original estimates as standards against which actual cost figures could be compared in order to identify the causes of deviations even though the production records were compiled in the same way as the original projections. (In designing their cost system, CFI's managers consulted the format that W.B. Peat devised for SDS.)[55] Instead, historic or past cost trends were employed as a comparative yardstick. Thus, CFI's executives came to use a 'floating' standard rather than a fixed point of reference to assess operating performance.[56]

When Talbot took over in 1907, he began centralising CFI's organisation and opened up blocked communication flows that prevented problem recognition.[57] One of the first things he did was to compare the actual costs and the composition of furnace burdens with the estimates, and he immediately realised that too much foreign ore was being charged to compensate for the poorer-than-expected quality of Liverton ore.[58] He changed mining procedures at Liverton, but he could not reduce costs to the levels in the original estimates because of the declining quality of the deposit. It became apparent that the CFI project had been founded on a false assumption:

Liverton could not provide a sound basis for the firm's long-term development.

This realisation induced the new manager to devise operating ratios to assess the impact of Liverton's performance on CFI's overall cost structure. He determined that 1d. of extra cost per ton of ore raised iron expenses by 1s., and one per cent variations in iron content caused changes of 1s. per ton of steel.[59] Realising that the volume of mine output had an important impact on total costs, he quantified the cost reducing effects of increased output and priced outside ore sales below cost to reduce CFI's total expenses.[60] Talbot used these ratios and *ad hoc* calculations, instead of standard rates or full capacity operations, because CFI had departed from its original production strategy.

When Furness recognised that CFI could not achieve the competitive advantage needed to cut prices and win economies of scale in a single product field, he adopted a more passive policy of joining rather than fighting manufacturers' associations. The broadening of CFI's product line following the decision to make sections instead of plate also influenced this strategy.[61] As a result, there were fewer incentives for Talbot to develop a system that rigorously correlated volume and costs, although he did determine that CFI's break even point was 3,000 tons per week and used this as a general performance objective.[62]

Having failed to replicate the first stage of Carnegie's strategy and lost its ability to influence prices and sales, CFI did not need to extend its accounting controls to win economies of functional co-ordination. Talbot hired a new purchasing officer and a sales representative (CFI continued to sell extensively through agents) and centralised their reporting flows, but the functional organisation remained rudimentary. CFI did not sell direct and, therefore, did not need to dovetail purchasing and sales using systematic methods like those developed by du Pont.

In turn, without integrated functional controls, CFI could not develop accurate financial projections of the type that du Pont employed to support long-term planning. A Finance Committee received data concerning receivables, payables, sales booked and overdraft levels. With this information it could monitor changes in cash flow, but could not project future trends because the firm could not forecast sales. After CFI overcame its debt crisis in 1910, overdraft facilities provided a working capital cushion.

Operating rather than financial considerations dictated the direction of new investment. After CFI's productive core was operating, the need to increase primary iron and steel capacity to make fuller use of the rolling mill became the main consideration. Talbot assessed proposals according to payback or savings per ton rather than ROI criteria because he did not have to select from a range of investment alternatives and because liquidity and cost reduction remained important.[63] Moreover, CFI used retained profits instead of outside capital to pay for improvements. There was no reason to devise new capital accounting procedures in order to calculate ROI. The firm employed 'renewal' methods and, like SDS, used 'depreciation' write offs to finance extensions.

Talbot also reformed procedures for the reporting of capital spending. In 1912, he introduced monthly statements showing amounts approved for construction to date, plus new authorisations for the current month, less total payments made to date, leaving the figure still owed.[64] With this data the Directors could monitor overall expenditure, but lacking estimates of future monthly profits they could not correlate capital spending systematically with financial projections.[65] Since the firm did not win the anticipated cost advantage and remained exposed to the lag between order and specification submissions, management could not base profit estimates on full capacity operations. Thus, as CFI retreated from its aggressive strategy, Talbot modified aspects of its systems in accordance with environmental conditions and the firm's reduced capabilities.

V

The findings of this case study suggest that firm-specific resource sets as well as environmental conditions influence strategy formulation. Policy unfolds as management recognises complementarities between external circumstances and corporate attributes. Externally oriented communication channels reveal the existence of productive opportunities while a firm's internal information flows, including those that convey accounting data, indicate whether or not the company's resources qualify it to exploit specific opportunities. Thus, systems provide inputs into strategy formulation and their form evolves in line with the requirements of policy implementation.

In this regard, systems represent an important adjunct to administrative structure. CFI encountered difficulties because it did not adjust its organisation and accounting controls to fit its policy. Pease did not use targets articulated in the original estimates to evaluate production cost data in order to assess the effectiveness of policy execution, and he failed to develop controls for monitoring capital expenditure in direct relation to construction. As a result, he obtained a false impression of the firm's capability. Talbot, who had observed Carnegie's methods while managing American steel firms, undertook rudimentary organisational reforms and identified the sources of CFI's problems, but without an absolute cost advantage the firm could not overcome those environmental conditions that constrained structural change. SDS pursued a less adventurous policy which did not require innovations in organisation or systems.

Concerning the relationship between planning reports and accounting controls, these cases indicate that similar types of calculations were needed to determine whether parameters laid down in planning estimates were achieved. The differences that Edwards and Newell observed in the techniques employed in *ad hoc* reports and systems used by early firms may not have had debilitating consequences when technology, market conditions, and relatively low levels of managerial complexity generated little need for close interaction between planning and control. By the late nineteenth century, environmental conditions and the availability of high volume technology generated demand for accounting techniques that facilitated more comprehensive control. However, only firms like CFI, which pursued dynamic strategies and undertook complicated development schemes, needed such sophisticated controls. SDS required only simple procedures to link plans for incremental improvements to less complicated production records.

Overall, the accounting techniques employed by these two firms were not as advanced as those devised by du Pont, but they exceeded the sophistication of Carnegie's practices. While both British steel firms made provision for overheads, they accounted for depreciation in 'renewal' fashion. Unlike du Pont, SDS and CFI did not face environmental conditions that exposed economies which could be secured by linking functional areas with accounting controls. The owners of the two firms knew about, but did not employ, ROI techniques because they relied primarily on retained earnings for investment and did not consider a range of investment proposals. Even though SDS and CFI shared the same information sources, which on the surface resembled the accounting–engineering–management links found in the US, these specialised single-function firms had no reason to use more advanced techniques. While this study has provided some firm-level insights concerning the relationship between accounting systems and strategy formulation during an important period in Britain's economic history, further evidence from company records is needed to assess the representativeness of the practices described here.

NOTES

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1. Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA, 1977) and *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA., 1990). For Johnson's case studies see, H. Thomas Johnson and Robert S. Kaplan, *Relevance Lost: The Rise and Fall of Management Accounting* (Boston, 1987).
2. D. Solomons, 'The Historical Development of Costing', in Solomons (ed.), *Studies in Cost Analysis* (Homewood, IL, 1968), pp.17–19.
3. S.P. Garner, *Evolution of Cost Accounting* (Alabama, 1954), Ch.2.
4. Robert R. Locke, 'Cost Accounting: An Institutional Yardstick for Measuring British Entrepreneurial Performance circa 1914', *Accounting Historians Journal*, Vol.6 (1979), pp.1–22 and *The End of the Practical Man. Entrepreneurship and Higher Education in Germany, France, and Great Britain 1880–1940* (Greenwich, CT, 1984).
5. See also, Edgar Jones, *Accountancy and the British Economy* (London, 1981). and H.T. Johnson 'Toward a New Understanding of Nineteenth Century Cost Accounting', *The Accounting Review*, Vol.LVI (1981), pp.510–18.
6. Examples include, R.K. Fleischman and Lee D. Parker, 'Managerial Accounting Early in the British Industrial Revolution: The Carron Company, A Case Study', *Accounting and Business Research*, Vol.20 (1990), pp.211–21; N. McKendrick, 'Josiah Wedgewood and Cost Accounting in the Industrial Revolution', *Economic History Review*, 2nd series, Vol.XXIII (1970), pp.45–67; and Willard E. Stone, 'An Early English Cotton Mill Cost Accounting System: Charlton Mills, 1810–1889', *Accounting and Business Research*, Vol.13 (1973), pp.71–78.
7. J.R. Edwards and E. Newell, 'The Development of Industrial Cost and Management Accounting before 1850: A Survey of the Evidence', *Business History*, Vol.33 No.1 (1991), pp.36–47.
8. H.T. Johnson, 'Early Cost Accounting for Internal Management Control: Lyman Mills in the 1850s', *Business History Review*, Vol.52 (1972), pp.466–74 and *Relevance Lost*, pp.21–31.
9. Lymans like Charlton Mills also developed integrated financial and cost accounts. Concerning the potential problems arising from inventory evaluation, see *Relevance Lost*, pp.131–35. In Britain, demand for audited financial reports grew comparatively early with the rise of the securities market. Because British firms were single-function entities, auditors could obtain all the information they needed from the general ledger which recorded profit and loss arising from market transactions. Consequently, there was no need to use the two sets of books as an internal check. (*Relevance Lost*, pp.41–4).
10. For analyses of Carnegie's accounting methods see, Joseph F. Wall, *Andrew Carnegie* (New York), pp 314–16, 329, 336, and 342; Harold Livesay, *Andrew Carnegie and the Rise of Big Business* (Boston, 1975), pp.84–9; and Chandler, *Visible Hand*, pp.259–69. Edgar Jones reports that it was not until 1900 that major British railroads, like the North Eastern, developed accurate cost data for systematic rate setting (*Accountancy*, pp.115–6).
11. Chandler, *Visible Hand*, pp.268 and 360–61 and Livesay, pp.149–66. We do not know what accounting means Carnegie used to support functional co-ordination.
12. Chandler, *Visible Hand*, pp.111–2 and 115. British railways began to account for depreciation in the 1830–50 period (Edwards and Newell, 'Development of Industrial . . .', pp.52–3).
13. Chandler, *Visible Hand*, pp.272–78.
14. Marion Jelinek, 'Toward Systematic Management: Alexander Hamilton Church', *Business History Review*, Vol.54 (Spring, 1980), pp.63–79 and Johnston and Kaplan, pp.47–58. In contrast, American Tobacco reported sales and advertising costs and

Armour devised rough estimates for overheads and assessed selling costs at a flat 5% rate (Chandler, *Visible Hand*, pp.386 and 431).

15. Chandler, *Visible Hand*, pp.277–8.
16. Chandler, *Visible Hand*, p.415; H.T. Johnson, 'Management Accounting in an Early Integrated Industrial: E.I. du Pont de Namours Powder Company, 1903–12', *Business History Review*, Vol.49 (1975), pp.184–204; *Relevance Lost*, pp.61–92; and M. Massouh, 'Technological and Managerial Innovation: The Johnson Company, 1883–1898', *Business History Review*, Vol.50 (1976), p.46.
17. Thus, the du Ponts calculated depreciation from historic cost: some accountants advocate the use of replacement value as the basis for depreciation.
18. Chandler, *Visible Hand*, p.415 and Johnson 'Du Pont', p.193 n. 29.
19. This discussion of the Northern steel industry is based on B. Elbaum, 'The Steel Industry Before World War I', in Bernard Elbaum and William Lazonick (eds), *The Decline of the British Economy* (Oxford, 1986), pp.51–81; Steven Tolliday, *Business, Banking, and Politics: The Case of British Steel, 1918–1939* (Cambridge, MA, 1987); pp.46–81; and G. Boyce, 'The Development of the Cargo Fleet Iron Company, 1900–1914', *Business History Review*, Vol.63 (1989), pp.839–75.
20. For a description of Furness' business career, see G. Boyce, 'The Growth and Dissolution of a Large-scale Business Enterprise: The Furness Interest 1892–1919' (unpublished Ph.D. thesis, London School of Economics, 1984).
21. The shipyards controlled by Furness and Gray gave SDS preference at equal price. Thus, as long as the PMA remained intact, SDS received all of their orders.
22. SDS Directors Minutes [hereafter DM] 20 and 31 Dec. 1898 and 7 Feb. 1899. British Steel Corporation, Northern Regional Records Centre, Middlesbrough. Accession Number 04893 [all SDS and CFI records are housed at the BSC NRRC]
23. SDS Correspondence (Letter Book 2132) Sladden to Gray 28 Sept. 1899.
24. Bagley could only 'press' yards for submissions. He used the methods described above to calculate how many tons of specifications SDS needed to receive in order to run full. See, SDS DM 28 March 1908, 24 July 1912, and 27 Aug. 1913.
25. These changing parameters are reported throughout SDS DM.
26. Due to lags in payments from clients and to suppliers, slow specification flows squeezed SDS's cash position from two sides. Purchasing warrants could alleviate this pressure, and overdraft facilities provided a cushion at the cost of interest. SDS never stood out of the market on the expectation of falls in iron prices.
27. He assumed that SDS would receive enough specifications to run full in the forecast period. SDS DM 29 Sept. 1903, 19 Oct. 1903, 28 Nov. 1904, 19 June 1905, 27 March 1906, and 24 April 1911.
28. Analysis of Accounts, BSC 04908. About 75% of SDS's output consisted of steel plate.
29. SDS Auditors' Reports BSC 04879.
30. See Furness, Withy & Co. Directors Minutes 20 Aug. 1907 and Prince Line accounts National Maritime Museum, Greenwich [FWS B/6/1 & B/7/1].
31. Bagley did not account for the cost of idle capacity even though he recognised that SDS incurred closure and start-up expenses. He did, however, devise rough figures for profits and output lost due to strikes and breakdowns using full capacity operations as a standard. SDS DM 29 Sept. 1903, 9 Feb. 1904, and 23 Feb. 1911.
32. SDS DM 22 July 1904, 28 Nov. 1907, 28 March 1908, and 29 May 1912.
33. SDS DM 12 October 1900, 17 Feb. 1903, and 23 July 1913. The du Ponts could not accurately perform make or buy calculations either since they did not assign depreciation to intermediate products, but this did not hinder the formulation of final product strategy. (Johnson, 'Du Pont', p.202).
34. The Summary was included as a separate part of the Analysis.
35. SDS DM passim and Shareholders Minutes BSC 04908.
36. SDS DM 24 Jan. 1900, 21 Feb. 1901, 7 Dec. 1903, 4 Feb. 1905, 16 Nov. 1905, 27 Jan. 1910, 28 Nov. 1910, 27 July 1911, 28 Sept. 1911, 28 Sept. 1912, and 26 Nov. 1913.

37. To reduce expenditure on vital projects during poor years, the Board allowed Bagley to cannibalise the Moor works, thereby raising future restart costs. SDS DM 27 Jan. 1910 and 22 Jan. 1913.
38. SDS DM 22 June 1906 and Circular to Shareholders (BSC 03362).
39. Cost overruns recorded in SDS DM 17 Feb. 1903 29 March 1906, and 28 Nov. 1907 amounted to £3–4,500 at a time when the firm had reserves of £100,000.
40. SDS DM 26 June 1912.
41. The firm's method of capital accounting also prevented the Directors from comparing the ROI of this project with SDS's investment in existing plant.
42. SDS leased Weardale's blast furnace (DM 17 Jan. 1917) and bought iron makers Cochranes and Seaton Carew, undoubtedly with the aid of Excess Profit Duty rebates, to overcome supply threats brought about by a regional imbalance in iron and steel capacity arising from wartime construction. [W.G. Willis, *History of South Durham Steel & Iron Co., Ltd* (Portsmouth, 1969), pp.15–6.]
43. Consett was the most profitable firm. H.W. Richardson and J.M. Bass, 'The Profitability of Consett Iron Company before 1914', *Business History*, Vol.7 No.2 (1965), p.72.
44. Carnegie joined the Bessemer Pool to obtain cost data about his competitors. (Chandler, *Visible Hand*, p.268).
45. Boyce, 'The Development of the Cargo Fleet Iron Co.', pp.848–60.
46. Pease's plan of Feb. 1903 [BSC 07710] refers to an earlier set of estimates which has not survived.
47. Different methods were used to compute these expenses for the various departments: for mining and coking costs carefully estimated figures were divided by output; in iron making a round sum was used; in steel making Pease relied on Frodingham's costs, and used SDS's figures for rolling.
48. Capital costs were included in the Feb. 1903 plan (BSC 07710).
49. There is no evidence that the owners planned to build the additional plant which would have doubled capital costs.
50. Report of the Expert Committee BSC 07710.
51. The Approximate Statement is included in BSC 07710.
52. Boyce, 'Cargo Fleet', pp.860–73.
53. Livesay, *Andrew Carnegie*, pp.182–6.
54. For Talbot's view, see CFI DM [BSC 04906] 16 April 1908.
55. CFI DM 4 Nov. 1904.
56. This is reflected in the 'Summaries of Costs, Prices, and Profits' (BSC 04877) and the Manager's reports appended to CFI DM passim
57. Boyce 'Cargo Fleet', pp.855–60.
58. Talbot to Furness 3 Dec. 1908 BSC 04119 (file 203).
59. CFI Committee Minutes [hereafter CFI CM] BSC 04906 12 July 1911.
60. Since depreciation was not included, CFI may have lost money on these outside sales. (CM 1 Nov. and 28 Dec. 1910.)
61. CFI joined all associations that regulated its products and therefore could not follow competitors who joined some but not all groups so that they could win high margins on some products and 'dump' output in other markets to achieve higher throughput. Talbot and Furness disagreed on this policy. but lack of a cost advantage made it necessary. (DM 10 Apr. 1908; CM 10 June 1911)
62. DM 22 June 1908 ff.
63. DM 14 Aug. 1907, 1 Nov. 1910, 23 July 1913, CM 12 July 1911, 13 Dec. 1911, 17 July 1912, and 23 April 1913.
64. DM 29 May 1912 ff.
65. The Board received profit and sales data for the current month.

The Neglected Intangible Asset: The Influence of the Trade Mark on the Rise of the Modern Corporation

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Trade marks are – and have been since the late nineteenth and throughout the twentieth century – significant business assets; this paper argues that they have played a critical role in the rise of the modern multifunctional, multiplant, multiproduct, multiregional, multinational enterprise. Yet, they have not – nor have brand names, trade names, and company names (and following the lead of the legal scholars I use these terms interchangeably herein) – been systematically studied by economic or business historians, even though much has been written by other scholars on these intangible assets.[1] Most economic and business historians recognize the importance of intangible property rights, in general. Thus, Douglass C. North and Barry R. Weingast have written, 'For economic growth to occur the sovereign or government must not merely establish the relevant set of rights, but make a commitment to them'.[2] As I will show, the United States did this in the late nineteenth and early twentieth century in relation to trade mark protection.

In this paper I will: (1) explain the importance of trade marks to the coming of age of the modern managerial corporation; (2) present a brief chronology of the principal US laws and some major court rulings in US trade mark history with the aim of demonstrating the correspondence between the increase in the value of this asset to the modern firm and the development of legal support for it; (3) analyse the unique and crucial characteristics of the trade mark, comparing it with the patent; and (4) indicate how the trade mark promotes economic efficiency gains through time. While this article focuses on the growth of American business and modern US legal history, the argument pertains to the rise of the modern corporation in general; and indeed I do consider the experiences in the United States of non-US based multinationals. This paper, moreover, should make it evident why developed countries have nationally and internationally known trademarked products (the names of which can be legally defended in the courts) and less developed ones lack such trademarked goods and services and protection of the property rights.[3]

II

When economic and business historians discuss the rise of the modern corporation, our debt goes to the pioneering work of Alfred D. Chandler, Jr. Chandler has emphasized what he calls the 'technological and organizational underpinnings' of the modern corporation. He has insisted that by taking advantage of new technology and through organisational innovations, the modern corporation has created efficiencies.[4] The modern corporation – in Chandler's view – benefits from economies of scale and scope.[5] Yet, the large modern corporation (often a multinational one) has required more than advanced technology and more than organisation to persist and to succeed. Unless it had volume sales, there could be neither economies of scale or scope (production and distribution economies would go unrealized); organisation was not required if the enterprise could not obtain a market for its output. By definition, sales were necessary for survival. The argument of this paper is that if a firm is to attract customers *to it*, it must draw those buyers to some 'name' that is unique and known. Without the distinctive trade mark, brand name, trade name, or company name (as noted, I use these words as equivalents), it would be impossible to pull consumers to the particular goods or services of an enterprise and the firm would be unable to take advantage of the increasing returns to scale and scope. A company's advertising is pointless with no name to promote.

Indeed, the very endurance of the firm seems linked with a name or names that over long periods continue to bring in customers. If one views an enterprise as having the advantage of knowledge accumulated and transmitted cheaply through time within the firm, it has to be a given that the output of that firm must be desired by buyers. The name embodies the company's reputation and offers information to the customer that sustains the enterprise. To quote Harold Demsetz, a property rights system that provides trade mark protection encourages 'investment in "permanence", and discourages investment in fly-by night operations'.[6]

The giant American-headquartered corporations that emerged in the late nineteenth century offered a range of new products that benefited from economies of large-scale output. To sell sewing machines, harvesters, cash registers and so forth, there had to be trade names. These were advertised products. Standard Oil, which took advantage of major economies of scale, adopted the name 'Standard' to connote a standard quality product.[7] All the US companies in the late nineteenth and early twentieth century that became multinational enterprises – based on their sales abroad – offered trademarked goods. So, too, all the successful European multinationals that invested in the United States in this same period sold trademarked products.[8] For reasons that will become apparent, the trade mark became especially valuable to multinational corporations.

Trade marks are *not* new to modern managerial enterprises, nor are they necessarily confined to major enterprises. Archaeologists have found potters' marks on pots at least 4,000 years old from a region that became part of ancient Greece.[9] The mark seems to have identified the producer. Yet, there is no evidence then or subsequently, as Greek civilisation developed, of Greek laws granting exclusivity to trade marks.[10] Likewise, a small business – a dressmaker, today or in years past, for example – has her name that recommends customers to her; her reputation (the product she provides; her skill and industry) attracts purchasers to her dressmaking services. The property right, her name – the intangible asset – does not, however, require legal defence, for the close nexus between seller and buyer growing out of the one-to-one exchange is sufficient to assure that property right. In a parallel manner, she does not need to protect her skills with patents (nor can she do so, since her method is not 'new and nonobvious' and does not meet other specifications for a patent)[11] nor must she establish a corporate entity that is a 'legal person'.

By contrast, the big modern corporation (by virtue of its large output) is characterised by a separation of producer and consumer through a distribution chain. This is even more true of the multinational enterprise than of the purely domestic one. The goods maker's name and reputation are not known to the purchaser through the intimacy of personal familiarity between seller and buyer. Yet, the need to differentiate the product – to draw customers to the firm's products rather than to competitors' output – remains (and indeed with a firm's economies of scale or scope becomes imperative) even though the name and reputation are no longer sustained by personal connections. Repeat-purchases (those made *again* by a single buyer and those made by *different* buyers on the basis of earlier buyers' information) of a particular firm's offerings are impossible if there is no brand name identification.

When the separation between producer and buyer occurs, the name and reputation become intangible property rights that *require legal support*. The modern firm uses the corporate form to attract and to manage capital. Patents assure the corporation (or individual) legal rights to inventions. The trade mark, the trade name, similarly calls for legal backing. The need to define and to defend in the courts the trade mark – as a corporate property right – becomes a *new* and significant feature of modern giant enterprise. The latter must stop others from free-riding on, or debasing, this asset. Since the consumer relies on the name in the transaction, free-riding and debasing become threats to the modern firm. Indeed, as we will show, the rise and development of the large enterprise in the late nineteenth and early twentieth centuries coincided with the major change from a common law acceptance of trade names to statutes, rules, and court decisions and from an arena with few to many cases.

Trade marks were sometimes adopted and promoted very early in the history of the modern firm, sometimes later. More systematic investigation is required on the use and timing of trade marks *by industry*; there were variations. With one set of products, the eye sees them as alike; the trade mark tells of differences. With a second set of products, the eye sees differences; the trademark confirms and designates the differences. With packaged or canned products, the eye cannot see what is there; the trade mark informs the consumer. Even if the eye can see, the purchaser may not be able to evaluate what is viewed (will a machine continue to work; is a medicine effective?); the trade mark helps the consumer answer these questions swiftly.

Brand names became important to cheap goods (soap, razors, candy bars) as well as to expensive ones (cars, clothes washing machines, pianos). They became key not only to consumer products, but to producer goods (from dye-stuffs to harvesters to electrical equipment).[12] For the buyer, the costs of switching to a generic or to an unfamiliar name differ substantially by industry. The costs are extremely high when goods are expensive and bad choices have serious repercussions (vital electrical equipment, for instance). They are low in the case of sweets, for example. Firm-specific names are *not* important to apples or oranges, where the consumer inspects the product in the market, nor to gourmet coffee beans where the reputation of a local shop is sufficient. Likewise, they are not essential to a coal company that sells a homogeneous product. They are, however, vital to the large-scale modern enterprise.

Initially, the trade mark was identified with the maker. As the modern corporation emerged, however, the trade name (which might be the same as the company name, although it need not be) became joined with the goods or services *per se*. By the early twentieth century, an American buyer of Lux soap might not know that the manufacturer was the Lever Brothers Co. Few of us know which company produces Hellmann's Mayonnaise. The manufacturer of the goods sold by Sears is not important to the buyer of the goods (the store name, Sears, is). What the customer is sure of is that no matter who is the maker – that is, even if the buyer is ignorant of the name of the maker – the purchaser will get in the product the anticipated standardised quality; the name carries information. Likewise, today the typical buyer of motel services has no idea who owns a particular Holiday Inn, Days Inn, or Quality Inn. What he (or she) recognizes is that each of these names is linked with a product that evokes certain expectations (and with these motels a reservation service as well). The trade mark defines what is being purchased.

In some ways, the trade name seems even more fundamental than new technology in the emergence of the modern firm, modern products, and the understanding of modern industrial structures. Thus, Sears, Holiday Inn, and McDonald's are not characterised by technological innovation (unless we consider technology in the broadest sense to include the social technology of distributing goods and services). But, these businesses could not prosper without the trade name. The trade mark is indispensable to large firms in the sale of services as well as goods.

In the connections between producer and consumer, the trade mark has a unique role. It is the property of the producer. The trade mark safeguards the producer's 'skill and industry'. But the trade mark also aids the consumer. When the consumer does not know personally the producer, the trade mark becomes the surrogate for the direct access by the buyer to knowledge of the product. Thus, only after the modern giant corporation, with its new products and processes and its multitude of buyers, came into prominence did the trade mark become an essential business asset.

Accordingly, although there has been a long history of trade marks, there has not been a long legal history relating to the defence of the trade mark. In 1925, as the modern managerial firm was emerging, Frank I. Schechter wrote:

> . . . nowhere is the obscurity of the origins and at the same time the 'touching absence of curiosity' concerning these origins more apparent than in the field of the law of the trade-marks. When we consider how great a factor trade-marks and good will represent in commercial life today . . . the comparative brevity of the history of that law . . . is remarkable indeed.[13]

Yet the 'obscurity' is not odd, *because* before the existence of the modern large-scale firm and the separation of producer and consumer, before the rise of the multiplicity of modern product choices, there was no compelling reason for a business to defend this intangible asset in the courts.

The reader will at once counter that long-distance trade is not confined to modern times nor to the modern corporation. Long-distance trade, where producer and consumer are separate, has existed for centuries. Likewise, the internalisation of that trade within a corporation is not unique to the nineteenth and twentieth centuries (the East India companies, the Hudson Bay Co., and similar trading enterprises had sizable transactions within the firm).[14] But, neither the arm's length nor the internalized long-distance trade depended to any great extent on production economies of scale or scope that are characteristic of modern goods and services. The trade mark was thus not crucial, although company names had started to serve an important function (the Hudson Bay traders were known as purchasers of fur and the name attracted Indian sellers of fur).[15] The trade mark becomes a fundamental and absolutely essential property right that requires legal support only when the firm must find means to increase its own sales to lower average unit costs to realise the advantages of economies of scale and/or scope; this is a characteristic of the modern giant enterprise (and the industries that have found giant enterprise appropriate). Subsequently, the established name can be used by the firm – as I will show – for other purposes as well. Likewise, as I will also demonstrate, the trademark has great importance in lowering costs to the buyer, once more serving to increase the quantities of goods sold.[16]

III

Potters' marks, as noted, are known to have existed over 4,000 years ago. They transmitted information on origins. By the middle ages, the trade mark was not an asset but a liability – a means of distinguishing *flawed* merchandise, of identifying culprit craftsmen.[17] Then, trade marks were used by guilds to attest to qualify and to control entry into particular trades; they were employed to single out the individual artisan, who manufactured or sold defective products.[18] There is no indication, however, that they received legal protection at that time.

As individuals took pride in their work and mark, the trade mark was transformed into an asset. British silver plate has long been branded, and an antique dealer can tell you the maker. While clearly a mark was a means of identification, Lord Hardwicke in 1742 saw no purpose in enjoining a trader from employing the mark of another firm. He wrote, 'Every particular trader has some particular mark or stamp; but I do not know of any instance of granting an injunction here [in England], to restrain one trader from using the same mark with another and I think it would be of mischievous consequence to do it.'[19] In short, what Hardwicke was saying in the mid-eighteenth century was that the mark had no exclusive rights attached to it, no legal support – a view that would be sternly rejected in the nineteenth (and twentieth) century, when the common law was interpreted as making the mark an exclusive, proprietary asset (under defined circumstances).

When in the eighteenth century, the Principio Co., an early British direct investor in colonial America, exported its iron, it had its name stamped on the bars.[20] Was this essential to the business? Probably not. Was it useful to the buyer? Undoubtedly. The historian Victor S. Clark suggests that in the American colonies laws passed to maintain the quality of manufactured articles came in time to form the basis of the country's subsequent trade mark legislation.[21] Colonial laws requiring the marking of tobacco, flour, pork and so forth before sale or shipment were continued after independence,[22] but not until the 1840s was the first state law passed 'to prevent fraud in the use of false stamps and labels' and it was almost 100 years after independence that the first US federal government trade mark law was enacted; I have never seen a court decision with a reference to the laws in colonial America. Yet, the historical use of trade marks to signify (to identify) product quality persists to the present, although unlike in medieval times or in the colonial era, in the United States the initiative in the adoption of the trade mark is by the manufacturer or the seller rather than by the guild or by a government body.

The US Constitution has a clause on copyrights and patents ('The Congress shall have the power . . . to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries'.) The Constitution contains no such statement on trade marks, brand names, trade names, or company names. In the early nineteenth century, American law on trade marks and brand names was common law. Court cases seem to have generally upheld the litigant's rights to exclusive use of a logo if not a specific name.[23]

Interestingly, foreign firms doing business in America were among those most active in defending their trade names.[24] The first case brought before a US federal court (1844), *Taylor v. Carpenter*, was one wherein the plaintiff was 'engaged in manufacturing and selling' in the United States as well as in England a product known as 'Taylor's Persian Thread'; the defendant, in America, had imitated the English firm's names, trade marks, envelopes and labels, and placed them on thread of a different manufacture. The US courts found that the defendant, by seeking to capture a market through imitation of the trade names of this English producer, was engaged in fraud, 'unfair competition'. The defendant, through his imitations, had created confusion in the minds of the consumer.[25]

Scottish thread manufacturers selling in the United States were often in court to protect their names.[26] This was true of J. & P. Coats and also of the Clark companies of Paisley, Scotland.[27] Likewise, a German investor in pencil manufacturing in the United States was a litigant in an early and important trade mark case involving an affiliate of a German multinational enterprise.[28] By the 1860s in the United States the principle was 'firmly established that while a manufacturer has no copyright in a label, he yet may adopt a trade mark, which so far becomes his own property as to entitle him to the protection of courts of law and equity.'[29] But, a party could not be restrained, by injunction, from using his own name, unless he used it to mislead.[30] This later became significant, for if there were two participants in the same business with the same name, could the first bar the second from using the same mark? The courts concluded that, yes, this could occur, *if* there was an attempt to capture the advantages established by the first user's name.

In an 1862 response to a British parliamentary committee hearing, a representative from J. & P. Coats explained that a company with the same name in America copied its wrappers and thus confused buyers. 'The Courts stopped the imitation, but could not prevent the use of the name. The name alone, however, was not sufficient, and as soon as the pirates were prevented from imitating the wrappers, their mere use of the name Coats did but little harm'.[31] Later, as the Coats name became well known in the thread business worldwide (and as Coats production became more mechanised with sizable economies of scale), the company became very concerned over the use of its name and frequently sued to prevent imitators from appropriating it.[32]

The ubiquitous role of foreign firms in the pioneer cases in America would lend support to my contention that the more distant the producer is from the consumer the more the need for legal guarantees of the intangible asset. As the modern enterprise grows, the trade mark becomes known to consumers farther afield and the name cannot be maintained through the personal visits of the buyer to the plant of the producer. The trade mark conveys the information that in prior times could have been obtained through personal contacts.

The first American federal trade mark legislation was finally passed in 1870.[33] Table 1 provides a chronology of US trade mark laws. The 1870 law gave the trade mark holder the exclusive right to use trade marks that had been registered under the provisions of this act. The place of registration was the US Patent Office.[34] This first federal law was entitled, 'An Act to revise, consolidate, and amend the statutes relating to patents and copyrights'; it was based on the assumption that the trade mark was similar to the other property rights (patents and copyrights) and thus guaranteed by the Constitution. For this reason, however, the 1870 law (and the 1876 amendment as well) was held by the US Supreme Court in 1879 to be unconstitutional; the Supreme Court said that the legislation confused the subject matter of trade marks with that of copyrights and patents. The Court asserted that the Constitution had authorised Congress to pass laws on copyrights and patents to encourage original expression and invention, by giving authors and inventors 'the exclusive right to their writings and discoveries'; but trade marks were 'neither an invention, nor a discovery, nor a writing, within the meaning' of that constitutional clause. The decision stated that 'Trademarks are important instrumentalities, aids . . . by which trade, especially in modern time, is conducted. They are the means by which manufacturers and merchants identify their manufacture and merchandise. They are the symbols by which men engaged in trade and manufactures become known in the marts of commerce, by which their reputation and that of their goods are extended and published; and as they become better known, the profits of the business are enhanced'. The trade mark was a distinctive symbol for a product *already in existence*. The 1879 decision continued, 'The ordinary trademark has no necessary relation to invention or discovery. The trademark recognized by the common law is generally the growth of a considerable period of use, rather than a sudden invention. . . . At common law, the exclusive right to it grows out of its use, and not its mere adoption'. It does not depend on 'novelty, invention, discovery or any work of the brain. It requires no fancy or imagination, no genius, no laborious thought. It is simply founded on priority of appropriation'. Thus, the patents and copyrights clause of the Constitution was inapplicable. The decision in the *Trade-mark Cases* suggested the possible relevance of the commerce clause of the Constitution (Congress shall have the power 'to regulate commerce with foreign nations and among the several States, and with the Indian Tribes'.) The 1870 legislation, however, had been based on the clause covering patents and copyrights and this was an error. Of key importance, in the *Trade-mark Cases*, the US Supreme Court defined the trade mark as a property right and indicated that damages might be recovered by an action at law. The Court maintained, moreover, to repeat, that the exclusive right to a mark was established under common law and was based on its *use*. The exclusive right did not depend on an act of Congress, or on registration.[35]

TABLE 1

US TRADE MARK LEGISLATION

The Sequence		The Statutes and their Disposition
1.	1870	16 Stat. 198 (8 July 1870). Amended 19 Stat. 141 (14 Aug. 1876). Found unconstitutional by the US Supreme Court, in *Trade-mark Cases*, 100 US 82 (1879).
2.	1881	21 Stat. 502 (3 March 1881). Amended 22 Stat. 298 (5 Aug. 1882).
3.	1905	33 Stat. 724 (20 Feb. 1905). This continued the registration of trade marks set up under the 1881 legislation. The 1905 act was amended or supplemented on 16 occasions (7 times between 1906 and 1913 and 9 times between 1920 and 1938).
4.	1946	60 Stat. 427 (5 July 1946). The Lanham Act. Between 1947 and 1975, this act was amended 7 times. In 1984, two trade mark acts passed, clarifying further the status of trade marks. The Trademark Law Revision Act of 1988 (PL 100–667, 102 Stat. 3935) that took effect on 16 Nov. 1989 introduced major changes.

Sources: The statutes (as cited above); B. W. Pattishall, 'Two Hundred Years of American Trademark Law,' in American Bar Association, *Two Hundred Years of English and American Patent, Trademark and Copyright Law* (Chicago, IL, 1976), pp.51–79; on the 1984 laws, A. J. Jacobs, *Trademarks Throughout the World* (New York, 1987), p.801; on the importance of the 1988 legislation, *Wall Street Journal*, 15 Nov. 1989.

By the time of this 1879 decision, the trade mark was generally accepted as a property right that was peculiar in that it could not exist apart from the business. It revealed the characteristics of, that is the goodwill embodied in, the product. Likewise, by this time questions on what constituted a legitimate trade mark – when there was a close resemblance, when the use of family names was an infringement, whether geographical designations could be employed, what were merely descriptive terms – were being aired and defined.[36] The courts were confronting what was a legitimate trade mark, a legitimate property right.

After the US Supreme Court rejected the first federal legislation (in the 1879 decision), Congress set out to pass a new act, carefully avoiding basing it on the copyrights and patents clause of the Constitution. As one legal scholar put it, the framers of the 1881 Act, 'no doubt over-reacting to the Supreme Court's decision in the *Trade-mark Cases*, two years earlier, strictly confined the [new] Act's scope to marks used in commerce with foreign nations and the Indian tribes'.[37] The 1881 law provided for the registration of trade marks (still at the Patent Office); an 1882 amendment indicated that nothing prevented registration of any 'lawful trade-mark rightfully used'. Until 1905, with this legislation, only trade marks used in foreign trade (or trade with Indian tribes) could be registered under federal law.[38]

Finally, in 1905, Congress enacted a trade mark law that covered – under the commerce clause – trade between the states (as well as that with foreign countries and Indian tribes). Like the earlier federal laws, it too provided for registration of trade marks at the US Patent Office. Over the years this legislation was amended and supplemented.

Under the 1881 act, registration had been for 30 years; under the 1905 act it was for 20 years. There were renewal provisions. Under a 1920 amendment, registration existed for perpetuity, unless cancelled.[39]

In 1946, Congress passed the Lanham Act, which improved the statutory law in the trade mark field, clarifying the definitions of a trade mark and developing rules of unfair competition.[40] Under the Lanham Act, a person or company sued for trade mark infringement might defend the action by showing that a trade mark had been used in violation of anti-trust laws; if that were the case, the Federal Trade Commission could take steps to cancel the trade mark so used. Trade marks were still registered in the Patent Office, which in 1975 was renamed the Patent and Trademark Office.[41] Under the Lanham Act registration remained in force for two decades, but could be renewed any number of times for additional periods of 20 years. In 1988, there was a major change in the trade mark law. The registration period was reduced to ten years, still with renewal fully available. That was not the major change; until this revision, companies could not register a trade mark without first having a product on the market. The 1988 legislation (which became effective 16 November 1989, a year after its passage) lets companies protect a new trade mark for up to three years – before actually using it.[42] Our essay is historical and deals with the accepted practice of times past.

When foreign multinationals invested in the United States in the late nineteenth and early twentieth centuries, they registered their trade marks, sometimes in particular states, sometimes in Washington, and often under both states' and federal laws.[43] American companies also took advantage of the registration provisions (large US corporations were typically involved in foreign commerce and so could register their marks under the 1881 law). During the 1870 federal law's nine years of existence, about 8,000 trade marks were registered. Under the 1881 and 1905 acts (and their amendments), well in excess of 300,000 trade marks were registered.[44] In the peak year (before the 1920s) of 1906, 10,568 trade marks were registered; during the 1920s, every year registrations were above 10,000 and in 1924 reached 15,727.[45]

The courts were the place, however, where trade marks were defended, definitions clarified, and rights maintained. The courts' role in the history of trade mark law seems far more significant than the statutes. Before 1870, only 62 trade mark cases had been decided by American courts.[46] Subsequently, as companies became larger and the trade mark became an asset ever more important to defend, trade mark cases proliferated. In the *Trade-mark Cases* (1879), the US Supreme Court had stated that exclusive rights to trade marks were accepted under common law and did not require an act of Congress. Registration was not needed to maintain a trade mark (nonetheless, companies registered their trade marks to support the position of the mark should others infringe; the 1881 legislation said that 'registration of a trademark shall be *prima facie* evidence of ownership'.)[47]

In the litigation in defence of trade marks, there continued throughout to be a sizable number of cases with foreign multinationals as plaintiffs. Likewise, many large American companies went to court to protect their intangible asset. The trade mark embodied the goodwill of the enterprise. By the mid-1920s, it was well established by the courts that 'The owner of a trade mark, who expends large sums of money in making his mark known to the public as a symbol and guarantee of the excellence of the quality of his product should receive the same protection from the courts for his investment in advertising his trade-mark that he would undoubtedly be entitled to receive for investment in plant or materials'.[48]

This view had evolved since the late nineteenth century. In 1891, Chief Justice Fuller had put it clearly: 'The jurisdiction to restrain the use of a trademark rests upon the grounds of the plaintiff's property in it, and of the defendant's unlawful use thereof'. This decision established that the doctrine of 'unfair competition' by the infringer was based not only on fraud on the public (confusing the public), but also on the plaintiff.[49] The trade mark manual writer James L. Hopkins quoted Justice Coxe as saying:

> No man has a right to use names, symbols, signs or marks, which are intended . . . to represent that his business is that of another. No man should in this way be permitted to appropriate the fruits of another's industry. . . . The money invested in advertising is as much a part of the business as if invested in buildings, or machinery, and a rival in business has no more right to use the one than the other . . . No one should be permitted to step in at the eleventh hour and appropriate advantages resulting from years of toil on the part of another.[50]

The courts, however, were ready to qualify this decision and a famous trade mark case made the point most vividly. Before World War I, all the principal German chemical companies had affiliated enterprises in America, to sell and to a lesser extent to manufacture German products.[51] Of these the German Bayer Co. was pre-eminent. Like all the German enterprises, it had many patents; it also had trade marks. Patents are given for a limited time. Trade marks could last forever. When the patent expired, a way for a firm to hold a market that had been created was through trade marks. So important were these intangible assets that the active head of Bayer in the United States was a patent attorney, Anthony Gref, 'whose chief occupation was to protect patents and trade-mark rights on dyes and dyestuffs'.[52] Bayer's patent on aspirin expired on 27 February 1917. But Bayer believed that Aspirin was a trade mark and hoped to retain its market despite the absence of patent protection. Several American firms (typically retail druggists) had made pressed tablets (from Bayer's ingredients) and sold them as aspirins with their own wrappings. Bayer filed suit against one, the United Drug Co. After World War I was over, and no doubt influenced by the anti-German sentiment in the United States, Judge Learned Hand of the Southern District Court in New York ruled that *for consumers*, aspirin had become a descriptive name of the product. Prior to 1915, Bayer had sold principally to physicians and the trade and had promoted the product through these channels. Judge Hand argued that as a result of this strategy, the word aspirin for the general consuming public had passed into the public domain.[53] Clearly, trade mark rights were far from absolute. Proprietary, exclusive, rights to a trade mark could not be maintained when the mark had become a general description of the product.

Businesses recognized how careful they had to be to avoid having the trade name – a valuable *private* asset – become a generic. Thus, Coca-Cola regularly engaged in litigation to preserve the firm's rights to its name; The Kimberly-Clark Corporation has successfully defended its rights to Kleenex; and later – but similarly – Xerox attorneys kept that name from becoming a general description of the copy-making process.

By the early 1920s, most of the principal aspects of the trade name had been clarified in the courts; managers of most large US enterprises knew its value. One trade mark authority has maintained that 'a free commerce' could hardly exist without trade mark protection. 'Unless one can be assured of some sanctity for his means of commercial identity, thereby to enjoy the fruits of his own labor, free enterprise and the beneficial competition that it engenders is without motivation'.[54]

Nonetheless, in much of the literature, the trade mark has not – in the past – been associated with free enterprise and free competition. Indeed, as we have shown legal protection only became of key importance with the rise of giant enterprises. And, as these large businesses were being perceived as anti-competitive trusts and as 'trust busting' occurred, it was logical that such views would spread over to the issue of how trade marks were used. Could the *trade mark holder* (as distinct from the trade mark infringer) employ the trade mark for anti-competitive purposes?[55] After all, the mark gave exclusive, 'monopoly', privileges to its owner. In 1911, in the same year that the US Supreme Court was breaking up Standard Oil and American Tobacco, the Court ruled that contracts maintaining a resale price of a trademarked good were unlawful under the Sherman Antitrust Act.[56] In a number of anti-trust cases, the strategy of using 'fighting brands' – brands offered to customers at cut-rate prices – was judged a predatory practice.[57] A writer on trade marks in 1917 pointed out that American courts generally ruled in a way that was hostile to monopoly and would encourage competition.[58]

In various instances 'monopolistic practices' linked with trade marks were condemned by the US courts. A series of such decisions came in the immediate post-World War II years, once more associated with the renewed vigour of US courts in anti-trust matters. As Clair Wilcox has noted, 'in a number of cases involving the sharing of markets for trademarked goods by international cartels, decided from 1945 to 1950, the courts found such arrangements to be in violation of the Sherman Act. . . . Trademarks, said the court in the Timken case, cannot be made a tool to circumvent free enterprise'.[59]

In short, as the modern enterprise emerged in the late nineteenth and into the twentieth century, so too there was the passage of legislation and proliferation of court cases dealing with trade marks. The legal history followed two paths, the first concerned the protection of the asset (with court cases usually initiated by the trade mark holder against an infringer) and the second concerned restraint of trade (with court cases generally started by the US government against the trade mark owner). Most large firms came to recognise that the legally-protected trade mark was a necessity.

IV

Trade marks and patents have some similarities, and many differences. A comparison of these two intangible assets helps clarify the role of trade marks in the rise of the modern corporation (and in economic development).[60] Both are 'intellectual property'. Both provide owners with a legally protected monopoly, that is exclusive rights. Often, in the past (and the present) the same attorneys who deal with trade marks handle patents. Many works on the law of patents have a section on the law of trade marks. Frequently, chapters or passages in books read, 'patents, trade marks, and copyrights'. Both patents and trade marks are registered at the same office in Washington, DC. Patents, like trade marks, have interested pursuers of anti-trust violations. Edward Chamberlin studied the two and found that to those who argued that the extent of monopoly power was greater with patents, he pointed to the huge prestige of such names as 'Ivory', 'Kodak', 'Coca-Cola'. He concluded that there was little difference in 'the degree of monopoly' power obtained through the use of patents and trade marks. 'Each [a patent, a trade mark] makes a product unique in certain respects; this is its monopolistic aspect. Each leaves room for other commodities almost but not quite like it; this is its competitive aspect'. For Chamberlin, who was exploring the relationships between monopoly and competition, this combination inherent in both intangible assets had a special interest.[61] Both patents and trade marks are legally protected under the same broad rationale: 'to create incentives that maximize the difference between the value of the intellectual property that is created and used and the social cost of its creation, including the cost of administering the system'.[62] Over the years, the courts have protected both, accepting the advantages of granting exclusive rights.

These similarities accepted, most experts on trade marks argue that it is a mistake to confuse trade marks with patents and that the two are very dissimilar.[63] A patent must be registered to be upheld; a trade mark's validity is confirmed by registration but its *use* is paramount to its legitimacy. The patent protects new inventions, for a temporary period; the trade mark is sustained, to repeat, when it is used[64] and thus has nothing directly to do with new inventions; moreover, the exclusive rights it bestows are without time limits.[65] A patent can be designed around; a trade mark is much harder to copy (legally).[66] On the other hand, patent holders are often accused of using a patent to prevent rivals from making a good and keeping an invention off the market; the trade mark since it is based on use (and on a known product) could never be employed in this manner to preclude others.[67] The trade mark does, indeed, stop others from making Brand X, but it does not prevent them from making or providing a good or service with all the same properties except the name and the trade image (any one can open a motel; they just cannot call it a Holiday Inn). Some writers on trade marks insist that there can be no monopoly at all, because the need *to distinguish* a firm's products from those of other firms implies competition.[68] A patent is specific to a single invention; a trade name can be passed from one product to another; the image created by the name connotes what the enterprise chooses to project.[69]

For the purposes of this paper, it is particularly germane that legal protection for patents existed long before the modern giant enterprise; the importance of this protection did not coincide with the rise of the modern corporation.[70] The trade mark's legal support seems more closely associated with the emergence of the modern firm. A patent, moreover, can be granted to an individual as well as a company; a trade mark, by contrast, is the property of a business.[71]

The trade mark's functions relative to the modern company are entirely separate from those of the patent in other respects. The contract that allows a particular independent firm to bottle Coca-Cola, to sell Exxon gasoline, to distribute Ford cars, or to display the name Intercontinental Hotel provides 'satellite firms', those not owned by the giant enterprise, with the use of a valuable legally-supported intangible asset. The benefits thus accrued from the use of the name go to the owner (the big business that is obtaining further market penetration), to the satellite firm that gains advantage from the owner's past 'skill and industry' and from the latter's promotion of the mark and does not have to replicate that investment, and to the consumer that is attracted by the reputation of the good or service. The patent, even when licensed, does not seem to have this spider-effect.

The specific public policy rationales in granting patent and trade mark protection are also distinct. A patent is given to encourage the 'progress of useful art'. The trade mark not only protects the company that has invested in developing, promoting, and advertising a product, and the satellite firm that uses it, but in addition, and of great significance, protects and gives information to the purchaser. Trade mark protection furnishes incentives for the firm to uphold quality, which serves the buyer. A vital public policy reason for providing the producer exclusive rights over a trade name is that this is a valuable way (there is no other) to inform the consumer.[72] Patent protection has no parallel justification.

V

How, specifically, does the legally-protected trade mark enhance efficiency and aid in the rise and persistence of the modern giant enterprise? The traditional model of perfect competition assumes (*ceteris paribus*) that any exercise of monopoly power results in smaller output and higher price than under competitive conditions. In this spirit, the anti-trust tradition (and at times the American courts) have argued that the trade mark served to reduce efficiency – as all monopoly does. Many economists, however, now accept that large companies (with monopoly power) can be more efficient than smaller ones and that the modern corporation can be viewed as 'an economizing, rather than mainly a monopolizing entity'.[73] This phrase of Oliver Williamson's is part of his general rejection of the 'inhospitable' tradition of anti-trust. It is highly relevant to a consideration of trade names and the emergence of the modern corporation; herein, I will attempt to show the trade mark's important contribution to the rise of such an 'economising' firm.

The trade mark has served the modern corporation by aiding in the increase output and the lowering of price in five specific ways. The first of these reveals efficiency gains at a particular moment. The other four involve efficiency improvements over time. The modern giant enterprise of the late nineteenth and twentieth centuries that sold differentiated (trademarked) products by definition did not face a horizontal demand curve. It could not automatically sell at a single price all it produced. By virtue of its 'monopoly power', it set price or quantity, constrained by the demand curve. When an enterprise – using new technologies – had increasing returns to scale, the quantities sold had to be substantial to obtain the lower unit cost. To sell the sizable quantities – as stated in the introduction to this article – required pulling buyers to the particular firm's products. Products do not sell themselves. Forward integration by manufacturers into distribution was often required, as Chandler has shown. Yet, this remained inadequate, unless the buyer actually selected the particular product. The trade name was, thus, a necessary complement to the enlargement of the firm through forward vertical integration. The promoted, the advertised trade name was the only way to draw buyers to the particular firm. It was impossible to promote or to advertise an abstraction; there had to be a name identification. Thus, the trade mark provided the means to realise the economies of scale and scope. Forward integration, advertising, and promotion, to be sure, entailed added costs, but these costs were more than recovered by the greater volume achieved.

Large modern corporations had histories that established and verified their reputations. Costs were incurred in proving, confirming, and reconfirming their standing. These costs were those of advertising, promotion, and distribution, but also of what was behind the name, that is, of the research and development, quality control, and so forth.[74] By being able to draw customers to the individual firm, by the company's having the sizable market, the trade mark opened the way for added production and the spread of all these costs over more units (reducing unit cost). Accordingly, the use of the trade mark to bring in customers to a single firm resulted in more rather than less output and allowed a firm to capture the advantages of the increased returns to scale. Under conditions of perfect competition with no restrictions on entry, the long-run average cost curves would cross the demand curve at a point where there would be a higher price and lower production; large-scale output, achieved by the presence of a market for the large firm's products, made possible the lower prices.[75] Lower prices made the modern goods accessible to more consumers.

Along the same line, since the trade mark (in Chamberlin's words) 'leaves room for other commodities almost but not exactly like it', since (as others have maintained) the need to trade mark is a need *to distinguish* the product, the presence of the potential for competition and of substitutes – the effect of high cross-elasticities of demand – flattened the demand curve. John M. Clark saw the consequence as mitigating the seriousness of the effects of imperfect competition.[76] The result was to provide for a greater output, so the firm could realise the economies of scale and scope.

Second, economies of scale and scope can be technological; but the trade mark can also directly support other economies. An established firm (with a known name and reputation) has an advantage in borrowing, even without holding the risks of the particular use of the capital constant. A long-established firm with a good credit history – with a 'name' that conveyed financial reliability, could borrow more cheaply than a newcomer. Thus, the firm's name, its reputation, brought down its costs of capital. Its unit costs were reduced. The use of a known name – that carries information on financial viability – over time can provide the basis for a downward shift in the cost curve.

Third, the quality of inputs can be improved through the identification of a corporation as a fine place to work. A familiar company, with a good reputation, is able to attract and retain more talented personnel. This would serve to raise efficiency.[77]

Fourth, sustained profits give the large firm more resources to invest in lowering its entire cost curve (i.e. profits that can be reinvested in research and development). The downward shift in the cost curve over time can often be explained by technological innovations; most economists agree that technological change serves to lower costs, creating efficiencies (this indeed is the main rationale behind patent protection). Does the trade mark encourage invention and in turn, the lower costs? The court cases on trade marks indicate, as noted above, that the legal protection granted this intangible asset was *not* designed to spur invention, but rather to protect the 'skill and industry' devoted to production; in actuality, however, the legal backing of the distinctive trade mark offered incentive for the development of new inventions. Because, as I have pointed out, the substantiated, known trade mark usually served to increase the quantity produced and sold and allocated research and development costs over more units, it appears to have encouraged added research. As it provided for the realisation of economies of scale and scope, it assisted in spreading the risks of innovation in other new products (the reputation of which did not have to be freshly established). Firms invest in research and development when they expect returns on their investments. Since the trade name offered the basis for continuity, this made investment in research and development worthwhile. Thus, cost-reducing research was fostered and aided in the downward shift in the cost curve.[78]

In this context, there is a related efficiency that is not firm-specific. Since the firm can choose to use – to stretch – trade names to the new products developed, the large firm may have the ability to enter related industries at lower costs than other newcomers (taking advantage of economies of scope). This reduces barriers to entry imposed by firms already in a particular industry and creates the possibilities of competition. Markets became 'contestable'. This improves competitive processes. The identical point may be made in relation to national and international markets. Names developed in one or more national markets can be extended to added national markets; the new 'foreign' entrant thus stimulates competitive processes in a domestic market.[79]

A fifth reason for improved efficiency lay in what happened over time to the firm's demand curve. The reputation embodied in the trade mark often results in a shift in the demand curve outward for the firm's particular product (or products). If there were economies of scale or scope, this allows for raised production at the lower unit cost; thus the firm once more is able to take advantage of these economies. Where this differs from my first explanation is that it dealt with any point in time, whereas in this case the *continuing* reputation connected with the trade name actually pushes the demand outward for the firm's output, providing in a dynamic manner for larger production and lower unit costs. This, of course, assumes the existence of increasing returns to scale.

In three other important and associated ways, the trade mark led to (and leads to) efficiencies. For the consumer, 'information is not free. Like any other resource, it is scarce, valuable, and expensive'. The trade mark conveys information. It tells the buyer about the product and its qualities. The purchaser uses the brand name or company name as a means of selecting. As Armen Alchian and William Allen have put it, 'A powerful reducer of the costs of information about the qualities of products is the brand name. Reputations are built and maintained on past reliable performance. . . . Brand names identify goods and services of verified predictable standards of quality'.[80] Trade names also reveal the reliability of the firm offering the product (will delivery be as promised; will service be available if something goes wrong; will there be replacement parts?).

Trade names – as I have shown – are not new, yet, the value of this intangible asset rises as information costs grow. The trade mark substitutes for information that is costly to obtain and difficult to evaluate. It provides the buyer with a 'short-cut', a quick means of appraisal. In the late nineteenth and twentieth centuries, as I have shown, as sellers and buyers increasingly became separated by distance, as sellers with new products (for cost as well as revenue reasons) desired volume sales, the intangible asset (the name) became an ever more valuable property, capitalising on the past history of the firm as well as its present performance. In the modern world, buyers can use their time in many ways. Finding out about a product can be time-consuming and thus costly. The trade name reduces the costs of the transaction. It lowers the cost of searching and exploring alternatives. Neither the seller nor the buyer need open boxes or unwrap packages (to show or to view the product); a mechanic does not have to be hired to inspect a new car. If the trade name has been effectively promoted, it tells the buyer about the product instantly. A warranty on a product depends on a trade name. The trade mark thus created further efficiencies in distribution.[81] It has done so for the industrial buyer as well as for the individual consumer. The name tells an industrial buyer the firm's reputation, whether deliveries will be as promised; whether maintenance will be provided on a complex machine. Modern producer goods from harvesters, to copy machines, to computers require repair services (the reputation of the seller includes the ability to provide aftersale services). The reputation lies in the name. The reduction of search costs for the purchaser is tantamount to a lower price.

A second closely connected source of efficiency is that a trade mark allows for modern packaging. Often, it is cheaper to ship and to sell packaged goods. At the point of sale, goods do not have to be measured, weighed, and wrapped. Time is saved.

A third linked basis for efficiency gains lies in the use in certain industries of independent business networks, 'satellite firms'. Companies can obtain added sales by using the trade name as part of contractual relationships with otherwise independent firms. The owner of the name does not have to incur the governance costs of internal organisation and other costs of extending the giant enterprise. How, however, does the owner of the trade mark assure that its mark is not debased, and its reputation not compromised? If the seller supplies products to the independent, satellite entity, then there is a built-in punishment for that firm not conforming with quality standards, i.e. the products can be withheld. (An independent Coca-Cola bottler that does not conform to the standards set by contract in Atlanta will not get syrup; an independently owned automobile dealer that does not meet showroom standards, do repairs, and so forth, will find that the company will choke off its existence by not supplying automobiles). The trade name provides the basis for a firm's increase in business through its own internalised organisation *and* through independent companies. Free riding by a satellite on a firm's intangible assets is made impossible (or at least very costly) through sanctions that would put the 'independent' out of business and through contracts that are legally enforceable. The consumer comes out ahead as a consequence, obtaining a known product.

What assures the buyer that a firm does not cheat and debase its own name? As Benjamin Klein and Keith B. Leffler point out, reputations and brand names are firm-specific devices that provide incentives to uphold the promises associated with the name. The value of lost repeat purchases 'motivates transactors' to maintain the standards set by the name. 'The value of future exchange' induces the sustaining of the reputation. The firm expects a stream of earnings based on its reputation.[82] Business historians know well cases where corporations have forgotten this lesson. The perils of 'debasement' of a name are especially evident in the recent history of A & P, Grand Union, and Howard Johnson. Each of these firms' managers failed to support the trade name's historically-achieved reputation with devastating consequences.

The trade mark must have and continue to have behind it a defined-quality good or service, or it loses its value. A consumer can switch to alternatives, since a trade mark does *not* preclude competitors from making the same good as long as it does not have the same name.[83] Trade marks stand for a particular company's offerings (they 'fix responsibility')[84] and if the offerings are not up to par, this will mean rejection by the consumer. Thus, the trade mark becomes crucial in requiring a company – *in order to* retain and to expand its market – to hold to its standards, to take responsibility for the standards. There is a built-in enforcement mechanism. Once again, the trade mark improves the workings of the free market and is linked with the continuity of the firm. Moreover, since a firm can use a trade mark as it chooses, it can segment markets – with top-of-the-line products and poorer, cheaper ones. The name communicates information to the customer. And in a 'feed-back' manner, the presence of the name, in turn, influences the producer's behaviour. If it does not do so positively, the firm itself may be in jeopardy.

Typically, products with name recognition are higher priced than generics, or products where the company's trade mark has yet to be established. From a public policy and historical standpoint is this economically inefficient? This paper argues that 'the higher price' is more apparent than real, that the trade mark upholds uniform standards and reduces transaction, specifically, search costs. The quality consistency behind the name alters what is being purchased. The price 'premium' is no premium, since with a generic the consumer bears the costs of uncertainty.[85] In short, in many ways, involving the lowering of costs of production, costs of distribution, and costs to the consumer, the use of the trade mark provides for the efficiency gains of the modern corporation.

VI

In conclusion, in the late nineteenth and early twentieth century, as the modern corporation with its many new products came of age, the US Congress and more particularly the courts provided legal protection to the exclusive use of trade marks, brand names, trade names, company names. The legally-backed trade marks (and the other names) became essential intangible assets, providing the basis for the rise of the modern enterprise. The trade mark had functions entirely different from the patent. The trade mark's fundamental contribution to the modern corporation was that it generated efficiency gains by creating for the firm the opportunity for large sales over long periods. It was the trade mark, as a transmitter of information, that made possible the effective utilisation of patents and new technology. Without the trade mark, the introduction and acceptance by buyers of modern products, produced with economies of scale or scope, and marketed over long distances, would have been impossible. The trade name allowed the firm to persist. Often, it lowered the cost of capital for the giant enterprise. It could provide for attracting quality personnel. Of paramount importance, the trade mark heightened efficiency by saving the buyer's time in transactions, supplying knowledge, and decreasing search costs. The trade mark by reducing the costs of information led to efficiencies in production and distribution. Trade names furnished (and furnish) the intangible cords that supported the existence of thousands of independent satellite businesses with links to the consumer, domestically and internationally. If there were not legal backing for this intangible asset, the trade mark's value would be diluted and it could not serve these functions owing to free-riding and debasing by a company's rivals. It was no accident that the legal history of protection of the trade mark coincided with the rise of modern corporation. By making it feasible to use resources more efficiently, by providing incentive for corporate controls over quality, by saving the buyer time, the trade mark has spurred economic growth and development.

While trade names can be employed by their owners for anti-competitive purposes (I do not deny that), their far more critical and indeed their pivotal role has been in opening the way for large-scale business firms to realise the economies of scale and scope of modern industries by communicating to intermediate buyers and end-users vital information. Trade marks made the very emergence, existence and continuance of giant corporations a reality. They are along with the legal support of them a necessity for modern large businesses. It is no surprise that less developed countries typically do not have nationally or internationally known trademarked products. Trade names represent the translation of ideas, inventions, new technologies, standardised services, into viable, commercial products. They save valuable time for the modern buyer, reducing his costs. Their history, along with how and when they obtained legal protection, adds a significant up to now neglected dimension to American economic and business history.

NOTES

A first rendition of this article was presented at a seminar at the University of California, Los Angeles, in February 1990; I appreciated the comments of Mary Yeager, Ken Sokoloff, Jean-Laurent Rosenthal, Ed Perkins, and Jose de la Torre, as well as all the other seminar participants. Tony Corley has contributed markedly to this paper, as have Geoffrey Jones and Panos Liossatos. I benefited greatly from the comments of one anonymous economist. My thanks also go to Marge Beary and David Feinberg of Florida International University library for their help with LEXIS, the legal information on-line retrieval service, and to Allan Greenberg, Trademark Attorney for Coca-Cola, Atlanta, for his thoughts (17 March 1988) and his providing me access to Coca-Cola's excellent trade mark library. Roughly three decades ago, the sociologist Juan Linz remarked casually, in a conversation, how few Spanish firms had trademarked goods; he asked, was there perhaps a connection between trademarked goods and economic development? That question was the original seed for this long-delayed essay.

1. The best research on trade mark history has been done by legal scholars; there is also much that is valuable on trade marks by economists, albeit most of the work is not historical. Trade mark lawyers have a huge body of writings (often manuals). There exists the large anti-trust and law-and-economics literatures that consider trade marks, typically in a tangential manner. One recent and fine article dedicated to the study of trade marks is W.M. Landes and R.A. Posner, 'Trademark Law: An Economic Perspective', *Journal of Law and Economics*, Vol.30 (1987), pp.265–309. It makes the distinction between anti-trust and trade mark law – and the different rationales behind each. Textbooks by industrial organisation economists usually contain a brief discussion of trade marks in the context of product differentiation and barriers to entry. There is a related, more specialised collection of works on the economics of advertising and the economics of information (the 'signalling literature'). Much earlier, the relationship between trade marks and patents fascinated Edward H. Chamberlin in his Ph.D. thesis (1927) and his *The Theory of Monopolistic Competition* (1933); I have used the eighth edition (Cambridge, MA, 1962). In books and articles on multinational corporations, there has long been an awareness that trade marks or brand names give a firm an advantage. The theoretical approach to multinational enterprise that emphasises intangible asset advantages is an outgrowth of the work by industrial organisation economists. See, for example, C.P. Kindleberger, *American Business Abroad* (New Haven, CT, 1969), p.14; R.E. Caves, *Multinational Enterprise and Economic Analysis* (Cambridge, 1982), p.4; and J.H. Dunning, *Explaining International Production* (1988), p.16. In attempting to understand why a multinational enterprise internalises certain activities (handles them within the firm) and not others, trade marks are often discussed. See, for instance, J.F. Hennart, 'The Transaction Cost Theory of Multinational Enterprise', in C. Pitelis and R. Sugden (eds.), *The Nature of the Transnational Firm* (1991), and his *A Theory of Multinational Enterprise* (Ann Arbor, MI, 1982). The marketing and advertising literatures also deal at length with trade marks and brand names. H. Morgan, *Symbols of America* (New York, 1987), is a recent popular presentation on the history of trade marks in the marketing, advertising genre. US social and cultural historians consider brand names and images, while philosophers, linguists, and anthropologists have studied symbols (I have not explored these writings for the present article). Business historians mention trade marks in their books and articles, but I have not located a single analytic history of trade marks by an economic or business historian. So, too, *historians* who write on law and economics have neglected this subject. For example, in his brilliant exposition, J.W. Hurst, *Law and Markets in United States History* (Madison, WI, 1982) omits entirely – aside from a brief reference to fighting brands – the crucial role of trademarks *vis-à-vis* law and markets.
2. D.C. North and B.R. Weingast, 'Constitutions and Commitment', *Journal of Economic History*, Vol.XLIX (1989), p.803.
3. When travelling to Japan in the last three decades, I have noted how widespread is the use of trade marks by Japanese companies. See, also, Akio Morita's account of how SONY became his firm's name. In *Made in Japan* (New York, 1986), pp.69–73, he wrote, 'I have always believed that a trademark is the life of an enterprise and that it must be protected boldly. A trademark and a company name are not just clever gimmicks – they carry responsibility and guarantee the quality of the product.' He explained how the trade mark was essential if SONY was to become a major enterprise. On various occasions, Morita reported, SONY has turned to the courts to attack infringers on its trade name. This statement by the leader of

one of Japan's most innovative companies coincides with and, indeed, iterates for another developed nation, for Japan, the theme of this paper.

4. A.D. Chandler, 'The Beginnings of "Big Business" in American Industry', *Business History Review*, Vol.XXXIII (1959), pp.1–31; *idem*, *Strategy and Structure* (Cambridge, MA, 1962); *idem*, *The Visible Hand* (Cambridge, MA, 1977); *idem*, *Scale and Scope* (Cambridge, MA, 1990); and *idem*, 'Technological and Organizational Underpinnings of Modern Industrial Multinational Enterprise', in A. Teichova, M. Lévy-Leboyer and H. Nussbaum (eds.), *Multinational Enterprise in Historical Perspective* (Cambridge, 1986), pp.30–54.
5. The phrase economies of scale has over the years taken on different, although related, meanings. Chandler has argued for the technological efficiency of the modern corporation (economies of scale – lower unit costs as output rises, based on large throughput of oil and other such products); in his newer work, he has stressed production and distribution economies of scope – lower unit costs as output rises, based on the complementarities of products and functions; and throughout his writings, in his emphasis on organisational efficiencies, he has maintained that the large multifunctional, multiproduct, multiplant, multiregional, multinational enterprise can achieve scale economies – lower unit costs as output rises, based on administrative co-ordination.
6. H. Demsetz, *Efficiency, Competition, and Policy: The Organization of Economic Activity, Volume II* (Oxford, 1989), p.30; *idem*, 'The Theory of the Firm Revisited', in *Ownership, Control, and the Firm: The Organization of Economic Activity, Volume I* (Oxford, 1988), pp.157–62.
7. D. Yergin, *The Prize* (New York, 1991), p.40.
8. See M. Wilkins, *The Emergence of Multinational Enterprise: American Business Abroad from the Colonial Era to 1914* (Cambridge, MA, 1970); *idem*, *The Maturing of Multinational Enterprise: American Business Abroad from 1914 to 1970* (Cambridge, MA, 1974); and *idem*, *The History of Foreign Investment in the United States to 1914* (Cambridge, MA, 1989).
9. F.I. Schechter, *The Historical Foundations of the Law Relating to Trade-Marks* (New York, 1925), p.20. If the dating is correct this is well before the Greeks appear as a people. A fine discussion of the early history of trade marks is in E.S. Rogers, 'Some Historical Matter Concerning Trade Marks,' *Michigan Law Review*, Vol.XI (1910), esp. pp.29–39.
10. Landes and Posner, 'Trademark Law', pp.266, 271–3, point out that the goal of language (and symbols) is communication that minimises 'the costs of avoiding misunderstanding and the costs of communicating'. Language, however, has 'attained a reasonable decree of efficiency' without 'a legally enforceable power to exclude others'.
11. The criteria for a patent are given in F.M. Scherer, *Industrial Market Structure and Economic Performance* (Boston, MA, 2d ed. 1980), pp.439–40.
12. Most industrial organisation economists consider the brand name as highly important in sales to the final consumer. They take the view, however, that profit-motivated firms are wiser than individuals, so trade marks are not needed to convey information to producers. Scherer, *Industrial Market Structure*, pp. 378, for example, writes that trademarking is usually not required for industrial goods, since industrial buyers are skilled at evaluating the products they receive. I argue that when there is a close relationship between the industrial buyer and the seller, an established trade mark may not be necessary since the intimate relationship between buyer and seller suffices. On the other hand, many companies that sold industrial goods – especially in international business – used trade names (or company names) to promote their goods. The name – often a company name – has been as important as an information communicator in producer and intermediate goods, as in consumer ones. Repeatedly, for example, German dye makers, in the United States before World War I, sought to use their German names, Hoechst, Badische, etc., in order to take advantage of their international reputation Wilkins, *History of Foreign Investment*, Ch 12. As

another case, prescription drug companies have been among the heaviest users of trade marks; they sell to hospitals and market through doctors. For companies such as the German Siemens and the American General Electric that sell producer goods on a large scale, the trade name is crucial in expressing the reputation of the firm – and has been since the nineteenth century.

13. Schechter, *Historical Foundations*, p.4.
14. A. Carlos and S. Nicholas, '"Giants of an Earlier Capitalism": The Chartered Trading Companies as Modern Multinationals', *Business History Review*, Vol.LXII (1988), pp.398–419.
15. This turns the coin over with the firm as buyer rather than seller, yet the universality of the argument lies in the point that I will be making as this paper progresses, i.e. that the name incorporates information and that this information content is the basis for the value of the intangible asset.
16. In general, a lower price increases the quantities sold.
17. Schechter, *Historical Foundations*, pp.38ff.
18. A. Hoogvelt, *Multinational Enterprise* (New York, 1987), p.211.
19. E.S. Rogers, *Good Will, Trade-Marks and Unfair Trading* (Chicago, IL, 1914), p.272, and *idem*, Some Historical Matter', p.40 n.30.
20. Wilkins, *History of Foreign Investment*, p.21.
21. V.S. Clark, *The History of Manufactures in the United States* (New York, 1949), Vol.I, pp.64–5.
22. Rogers, 'Some Historical Matter', p.41.
23. R. Cox, *American Trade Mark Cases* (Cincinnati, 1871).
24. T.A.B. Corley found in the Harvard Law Library a pamphlet on an 1834 case before the NY State Superior Court, involving as plaintiff, a British drug maker (James Morison); the judge, in charging the jury, stated that the defendants had manufactured a 'spurious imitation of these [Morison's] pills, and falsely represented that they were the same as those made by the plaintiffs; using their labels, and in every way wishing to deceive the public that theirs were the genuine pills'. The defendants had, in short, 'practised a fraud on the public and on the plaintiffs'. The jury awarded $400 in damages.
25. *Taylor v. Carpenter*, Circuit Court, US District of Massachusetts (1844), in Cox, *American Trade Mark Cases*, pp.14–20; see also *Taylor v. Carpenter*, Circuit Court, US District of Massachusetts (1846), in ibid., pp.32–44; and ibid., pp.45–67, and Wilkins, *History of Foreign Investment*, p.73. The Morison case (in a state court), cited in the prior note, was not referred to in *Taylor v. Carpenter*.
26. Taylor was an *English* maker, who was not important in the American market. The case, however, was often cited as the pioneer federal case in America. The *Scottish* thread makers *were* significant in their US business and the cases involving them were crucial to their success.
27. See, for example, *Coats v. Holbrook* (1845) in Cox, *American Trade Mark Cases*, pp.20–33. Another pre-1860 case, not reprinted in Cox, which is mentioned in ibid., p.259, was *Coats v. Platte*, 19 Leg. Int. 213. A third one is *Clark v. Clark* (1857) in Cox, *American Trade Mark Cases*, pp.206–10. The historian of J. & P. Coats, J.B.K. Hunter, wrote to inform me (27 April 1986) that the firm faced numerous cases of counterfeiting of its product in the United States in the 1840s and 1850s and often obtained injunctions.
28. *Faber v. Faber* (1867) in Cox, *American Trade Mark Cases*, pp.401–3. See also Cox, *A Manual of Trade-Mark Cases* (Boston, MA, 2nd ed. 1892), pp.158–9.
29. *Colladay v. Baird* (1860), in Cox, *American Trade Mark Cases*, p.258 (quotation). See also *Faber v. Faber* (1867), in Cox, *A Manual*, p.158.
30. *Clark v. Clark* (1857), in Cox, *American Trade Mark Cases*, p.206.
31. Wilkins, *History of Foreign Investment*, p.690.
32. In *J. & P. Coats v. John Coates Thread Co.*, 135 Fed Reg 177, 179 (1905), the court ruled that while any person has the right to use his own name in the conduct of his business in describing articles of his manufacture, and which he is dealing

in, he has not the right to use the name of any other dealer. A corporation did not have the right to use the name of one of its incorporators for the purpose of unfair competition with an older dealer, where it was likely to do injury. The court ruled in favour of J. & P. Coats.

33. There was earlier state legislation. New York had passed in 1845 an Act 'to prevent fraud in the use of false stamps and labels', and by the time of the enactment of the federal legislation in 1870, 11 other states had similar laws. B. W. Pattishall, 'Two Hundred Years of American Trademark Law', in American Bar Association, *Two Hundred Years of English and American Patent, Trademark and Copyright Law* (Chicago, IL, 1976), p.58. See also Rogers, 'Some Historical Matter', pp.41–2, on the state legislation and D. Robert, *The New Trade-Mark Manual* (Washington, 1947), Ch.12. On whether states could adequately protect trade marks, see Schechter, *The Historical Foundations*, p.141 n.2. All the lawyers' trade mark histories agree that the first federal legislation was in 1870. Yet, according to Morgan, *Symbols*, p.10, in the 1840s, 1850s, and 1860s, the possibility existed of registering trade marks at US district courts. Indeed, Morgan's book (pp.10, 46, 66, 79, and 104) prints pictures of trade marks registered at the Southern District Court in New York, and at district courts in Connecticut, Illinois, and Pennsylvania (in 1846, 1849, two in 1867, and one in 1868); each picture has the phrase, 'Entered according to Act of Congress' and most have the next three words 'in the year'; then there follows the date (1846, 1849, 1867, 1868). Nothing I have read (including Morgan), however, indicates that any law was passed by the US Congress on trade marks prior to 1870. Rogers, 'Some Historical Matter', p.41, and Pattishall, 'Two Hundred Years', pp.52–3, cite (as does Morgan) a 9 December 1791 *recommendation* by Thomas Jefferson that an owner of a trade mark should be permitted to register it at the 'court of the district' wherein the manufacturer was present, 'rendering it penal to others to put the same mark on any other wares'; yet Rogers, Pattishall, and Morgan then concur that the first federal trade mark law was passed in 1870. The early trade marks (the pictures of which are in Morgan as cited above) that were registered at the district courts were for patent medicines (in the 1840s), tobacco and cigars (in 1867, 1868), and canned oysters (1867). I hypothesised that there might have been private laws of Congress authorising such registrations, but a scrutiny of private laws did not come up with any relating to trade marks. It, thus, remains a mystery how and why these pictures show the words 'entered according to Act of Congress'. Jefferson made his recommendation in 1791 after a Boston sail cloth maker, Samuel Breck, petitioned Congress to be allowed to register his trade mark. Rogers, 'Some Historical Matter', p.41.

34. Statistical series on numbers of trade marks registered thus begins in 1870. See US Department of Commerce, Bureau of the Census, *Historical Statistics of the United States* (Washington, 1975), p.959. Note that the series does *not* include the registrations at the district courts (see prior note).

35. 100 US 82 (1879).

36. Pattishall, 'Two Hundred Years', pp.60–1.

37. Ibid., p.61.

38. It is not clear why interstate commerce was not included in the 1881 law. Recall, however, that 1881 was six years before the Interstate Commerce Commission Act and nine years before the Sherman Antitrust Act were passed, the first of which put the federal government directly in the regulation of railroads and the second of which dealt specifically with interstate commerce. In the period 1881–1905, as in earlier and in subsequent times, state governments provided opportunities for trade mark registration. By 1905 most states had a statute allowing the registration of trade marks at the office of the secretaries of state and protecting such marks from infringement. Rogers, 'Some Historical Matter', p.42, and J. L. Hopkins, *The Law of Trademarks, Tradenames and Unfair Competition* (Cincinnati, 3rd ed. 1917), p.384, and his Appendix F.

39. The first renewals of registered trade marks in the series on trade mark registrations

in *Historical Statistics*, p.959, were in 1914, 33 years after the passage of the 1881 legislation.

40. Pattishall, 'Two Hundred Years', pp.61–7.
41. A. J. Jacobs, *Trademarks throughout the World* (New York, 4th ed. 1987), p.801.
42. *Wall Street Journal*, 15 Nov. 1989; see also R. J. Posch Jr., 'The New Trademark Law', *Direct Marketing* (Aug. 1989), pp.80–1. (Posch is the author of *The Complete Guide to Marketing and the Law* (Englewood, NJ, 1988)).
43. Wilkins, *History of Foreign Investment*, p.177.
44. Pattishall, 'Two Hundred Years', p.61; and *Historical Statistics*, p.959.
45. *Historical Statistics*, p.959.
46. Schechter, *Historical Foundations*, p.134.
47. See discussion of this in Hopkins, *The Law of Trademarks*, p.545.
48. Schechter, *Historical Foundations*, p.171.
49. *Lawrence Manufacturing Co. v. Tennessee Manufacturing Co.*, 138 US 537. See Hopkins, *The Law of Trademarks*, pp.42–3, on this case. Yet, as early as 1834 this point had been made in the Morison case, see above.
50. Hopkins, *The Law of Trademarks*, pp.42–3. Coxe made this statement in *Hilson Co. v. Foster*, 80 Fed. Rep. 896–7.
51. Wilkins, *History of Foreign Investment*, Ch.11.
52. W. Haynes, *American Chemical Industry* (New York, 1945), Vol.III, p.312.
53. *Bayer v. United Drug Co.*, 272 Fed. 505 (SDNY 1921). The ownership of Bayer's assets in America had after World War I passed to American hands; the American owners (Sterling Products) had pursued the pre-war trade mark suit.
54. Pattishall, 'Two Hundred Years', p.51.
55. In the trade mark literature the phrase 'unfair competition' is used in the context of the behaviour of the trade mark *infringer*, who fraudulently captured another's trade. In the anti-trust literature, it is the trade mark owner, who is subject to accusations of anti-competitive acts.
56. In *Dr Miles Medical Co. v. John D. Park & Sons Co.*, 220 US 373 (1911). See C. Wilcox, *Public Policies toward Business* (Homewood, IL, 3rd ed. 1966), pp.191, 706–18. Until the 1930s, resale price maintenance was condemned by the courts as violating the Sherman Antitrust Act. Ibid., p.706. This viewpoint changed. For details see ibid., pp.706–18. What is important for our purposes is the use of the trade mark as an essential concomitant to resale price maintenance.
57. For an example, see Wilkins, *History of Foreign Investment*, p.367.
58. Hopkins, *The Law of Trademarks*, p.2.
59. Wilcox, *Public Policies toward Business*, p.191; *US v. Timken Roller Bearings Co.*, 83 F. Supp. 294 (1949); Wilkins, *Maturing of Multinational Enterprise*, pp.292–9, on the *Timken* case and other 1945–1950 anti-trust cases involving international business.
60. Economic historians have paid a great deal of attention to patents and economic growth.
61. Chamberlin, *Theory*, p.62.
62. S. M. Besen and L. J. Raskind, 'An Introduction to the Law and Economics of Intellectual Property', *Journal of Economic Perspectives*, Vol.V (1991), p.5.
63. Pattishall, 'Two Hundred Years', pp.58–59.
64. Even the 1988 legislation does not change this; if the trade mark is not used after three years, it will not be upheld.
65. Renewal provisions in trade mark legislation along with continued use provide perpetuity to the property right. The 'inapplicable-to-trade marks' patents and copyright clause of the Constitution offers protection only 'for limited times'.
66. This is the view of most trade mark manuals.
67. Scherer, *Industrial Market Structure*, p.452, for use of patents to foreclose entry and leave an invention undeveloped. Under the 1988 trade mark law, the trade mark could be used for a similar purpose but then only for three years and the

consequences would seem not to be material and, in fact, to be incidental (since no unique invention was behind the mark registered).

68. Rogers, *Good-will*, p.41. Mary Yeager tells me that with meat products, the eye sees them as alike. Only with long-distance trade *and competition* did meatpackers in the late nineteenth century start using brand names. Swift and Armour are included among Chandler's modern corporations.
69. In the industrial organisation literature this is called 'multibrand' interaction. It exists for General Electric toasters and General Electric generators, for example. I sit here looking at my computer: Zenith data systems (I know Zenith is reliable; I had a Zenith radio for many years; the name is familiar).
70. See for example, K. L. Sokoloff, 'Inventive Activity in Early Industrial America: Evidence from Patent Records, 1790–1846', *Journal of Economic History*, Vol.XLVIII (1988), pp.813–47.
71. Patents can be registered by individuals or by companies, and the US Patent Office statistical series separate the two. With trade marks there were never two series; the trade mark has always been identified with (registered by) a firm.
72. R. A. Posner, *Economic Analysis of the Law* (Boston, MA, 3rd ed. 1986), pp.37–8.
73. O. Williamson, 'The Modern Corporation: Origins, Evolution, Attributes', *Journal of Economic Literature*, Vol.XIX (1981), p.1542. Williamson is not alone in this argument; this is, of course, Chandler's view. See also, for example, Demsetz, *Efficiency*, pp.ix, 222. I share with these authors, and many others, the belief that optimal size does not have to be small; that concentration is industry-related and can arise by reasons of efficiency; and that the rise of the modern corporation can be identified with the superior rather than inferior use of resources.
74. This insight was suggested by Demsetz, *Efficiency*, p.29.
75. For a demonstration, Scherer, *Industrial Market Structure*, p.22.
76. See J. M. Clark, 'Toward a Concept of Workable Competition', *American Economic Review*, Vol.XXX (1940), pp.246–7. See also, W. F. Mueller, 'Du Pont: A Study in Firm Growth', (unpublished Ph.D. thesis, Vanderbilt University, 1955) pp.207–8.
77. Companies do institutional advertising – emphasising their name – to attract and retain quality personnel; surely this explains in part the recent Dow Chemical Company advertisements: 'Dow Lets You Do Great Things'.
78. Lest my reader find this too abstract, consider the innovators in US industrial research: General Electric, Bell Labs, and Du Pont. All of these firms had well-known *trade names* that gave continuity to their reputations.
79. The literature on multinational corporations has discussed international oligopolies, arguing that 'market failure' exists when these large companies are able to enter host country national markets. Yet, perhaps the coin should be reversed and the presence of large firms in international markets should be viewed as encouraging competitive vigour rather than discouraging it.
80. A. Alchian and W. R. Allen, *Exchange and Production* (Belmont, CA, 1977), pp.192, 294. Landes and Posner, 'Trademark Law', p.275, argue that the reduction of consumer search cost is 'the essential economic function of trademarks'. See their formal model in ibid., pp.275–80.
81. Scherer, *Industrial Market Structure*, p.378.
82. B. Klein and K. B. Leffler, 'The Role of Market Forces in Assuring Contractual Performance', *Journal of Political Economy*, Vol.LXXXIX (1981), pp.616–7.
83. If the reader counters that the barriers to entry – because of the costs of name promotion – are often too high for the consumer to have choices, one has only to point to the case of the US automobile industry. Honda, Toyota and Nissan were able to provide new product options when consumers became unhappy with the product quality of existing name brands.
84. J. T. McCarthy, *Trademarks and Unfair Competition* (New York, 2nd ed. 1984),

Vol.I, p.45, argues that the 'quality encouragement function' is the most important economic function of the trade mark.

85. I agree with Landes and Posner, 'Trademark Law', p.274, in rejecting the view that the trade mark provides its owner monopoly rents because it creates false images and deflects the consumer from lower-price substitutes of equal or higher quality and allows the firm to 'bamboozle' the public. All the historical evidence indicates otherwise.

Marketing in the Second Industrial Revolution: A Case Study of the Ferranti Computer Group, 1949–63

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It is 40 years since the first commercial electronic digital computer was delivered – a comment on an astonishing rate of technological advance, and an event which a few insightful individuals at the time predicted would launch a second industrial revolution.[1] Yet such has been the American dominance of the world computer industry since the 1960s that few care to remember that this was a revolution in which Britain initially led the way; that British scientists at Cambridge and Manchester Universities and the National Physical Laboratory built the world's first practical electronic digital computers; and that UK firms pioneered their commercial development.

It was Ferranti Ltd., the Manchester-based electronics firm, which built and installed the first commercial computer in 1951. Subsequently, Ferranti became one of the leading computer manufacturers in the 1950s (for a time it was *the* leader), establishing its dominant position with a blend of innovative technology and Government support. After not much more than decade, however, Ferranti sold its computer business to International Computers & Tabulators Ltd. (ICT). Against a background of increasing competition in the British market from American manufacturers, Ferranti had found mainstream computer activity unprofitable.

Finding the reasons for this remarkable and precipitous fall from such a commanding position has already exercised business historians, either as case studies of individual firms, such as ICL, or as examinations of the computer industry as a prime example of the 'British disease' – the chronic inability of UK manufacturers to exploit their competitive advantage.[2] This paper examines the selling and marketing function of Ferranti and attempts to discover whether failures in this direction were responsible for the company's lack of success. Marketing is a subject which remains relatively neglected amongst business historians, despite some recent attempts to reach a historical consensus on the subject.[3] What has been written so far has tended to reinforce an image of British business failure – lack of adaptability, obsession with technological considerations, excessive individualism, condescension to foreigners – that has been found in other areas of British business organisation and production. A few dissenting studies, however, have drawn attention to British marketing achievements, though this has been for the period before 1914.[4] More studies, it has been said, are needed. This is not least because most historical studies of British marketing have only examined nineteenth- and early twentieth-century industries.

Even amongst computer historians, marketing has attracted relatively little attention.[5] Computer historiography remains heavily oriented towards the machines and the people who built them. Thus the technical details of Ferranti's early machines are relatively well known.[6] Yet the importance of marketing should hardly need stressing. The most successful computer manufacturer of the twentieth century, International Business Machines (IBM) Ltd., has always regarded marketing as of paramount important. It was no coincidence that its first chairman, Thomas J. Watson (1874–1956), made his reputation in selling; and always regarded IBM salesmen as the stars of the firm. With his slogans, factory sing-songs and sales conventions, Watson endowed marketing with an almost spiritual significance. As his son and successor has remarked: 'technology turned out to be less important than sales and distribution methods . . . [and] we consistently outsold people who had better technology because we knew how to put the story before the customer, how to install the machines successfully, and how to hang on to customers once we had them'.[7] IBM still retains much of Watson Snr.'s sales-driven philosophy and (some would say) cut-throat methods.[8] That philosophy has proved eminently suitable in recent times, when computers have become a commodity and skilful marketing has become indispensable. Even such individualistic firms as Apple Computers Inc. have not been immune from these developments. According to a recent study: 'People at Apple focused their attention inward – on their leaders [Steve Jobs and Stephen Wozniak], on their myth, on their technology, on everything except their customers'.[9] This helped Apple become the fastest growing firm in American history, but it was John Sculley – a marketing executive at Pepsi-Cola, credited with reviving the 'Pepsi-Generation' campaign – who usurped Jobs as the head of the company and made it much more market-oriented.[10] In Britain the crucial importance of marketing can be seen in the fortunes of Amstrad, which under its founder Alan Sugar has been above all propelled by marketing rather than production considerations; and in the eclipse of the more technologically-inclined Sinclair Research and Apricot Computers. While Amstrad has regularly topped the league tables of best performing companies (absorbing Sinclair in the process), Apricot has moved out of computer manufacture entirely and into software by selling its interest to Mitsubishi of Japan.[11]

The development and exploitation of the computer after 1951, therefore, presents an opportunity to extend the historical debate to a 'new' industry, which has rapidly become as important as the 'old' industrial revolution giants of steel, coal and cotton. The sources for such a study are unusually rich, comprising internal Ferranti documentation (including a detailed typescript history of the Ferranti Computer Department by its sales manager), the papers of computer scientists at Ferranti and Manchester University and the correspondence of government organisations, such as the National Research Development Corporation.[12]

I

Early Marketing

The computer business of Ferranti Ltd. had evolved naturally from its war-time interests in electronic control systems and radar. It was above all the war and its nuclear aftermath that had, in the words of one electronics expert: 'converted a mass of radar experts with endless problems for which they were seeking solutions, into a mass of experts with endless solutions and no problems'.[13] In other words, the Second World War had built up a large pool of specialised knowledge within Ferranti that demanded a commercial outlet. In 1948 Ferranti sent a technical representative, Dr Dietrich G. Prinz, to study computer developments in the USA.[14] In the event, Ferranti were to find enough technical expertise closer to home. In June 1948, a team at Manchester University led by Professor Sir F.C. Williams (1911–77) and (Professor) Tom Kilburn, had run the world's first stored-program on a small prototype computer. This was the practical realisation of a long-term technical and theoretical problem that had occupied the minds of the best mathematicians and electronics engineers, mostly British and American, for a decade or more: how to build a calculating machine with an internal memory, that could store both programs and data. The Manchester device was thus the practical embodiment of Dr Alan Turing's idea for a *universal* machine, that could solve any problem capable of solution by mathematical means once an appropriate program had been inserted.[15] Government support from the Ministry of Supply for a commercial version of the Manchester computer followed soon after, bringing together the Ferranti and Manchester University teams in the first of a series of collaborative projects.

A Ferranti Computer Group was thus set up in 1949 at Ferranti's factory in Moston, under Jim Carter, the manager of the Instrument Department. Its first product was the Ferranti Mark I, which in February 1951 became arguably the first computer to be delivered commercially (though two American computer scientists, J. Presper Eckert and John Mauchly, had already been exploring the market in the USA and their UNIVAC I appeared on the scene only a few months later).

The Manchester University Computer (the first Ferranti Mark I) was formally opened at the University's Machine Computing Laboratory on 9 July 1951. Since Ferranti regarded this as an announcement to the world that they were ready to make and sell computers, the company ensured that the ceremony was suitably lavish. Well over 150 scientists, Government officials and interested businessmen were invited to the launch – a virtual who's who of the British computing community – which was also marked by a four-day computer conference. The firm made the most of this opportunity, producing a glossy booklet for the inaugural conference, which proved a great success.[16] Many seminal ideas, such as Professor Maurice Wilkes' ideas on micro-programming, were propounded at the conference and the event firmly placed Ferranti in the vanguard of the emerging computer industry.

A coherent computer sales policy at that time, however, was slow to emerge at Ferranti. Initially its efforts were diffuse, partly a reflection of the enviable fact that Ferranti had no UK competitors in 1951. All that needed to be overcome was the inertia of customers, which proved to be a formidable obstacle in itself. (Lord) Vivian Bowden (1919–89) became the chief salesman from 1951 to 1953, though as he himself admitted there was no formal sales position. Bowden himself had no experience in marketing, though his wartime career in radar work at the Telecommunications Research Establishment and his energetic personality probably counted for more in the early 1950s, when the computer fraternity was a small one.[17] Bowden provided personal links to both F.C. Williams and (Lord) Patrick Blackett (1897–1974), the Professor of Physics at Manchester University. Bowden was also enthusiastic about computers, recognised their potential, and did what he could to publicise them. He edited a classic collection of essays, *Faster Than Thought* (1953), which was a pioneering attempt to provide a popular introduction to computers and which Bowden initially began writing, as he put it, 'as a hand-out' to help sales. Ferranti earmarked about £20,000 a year for Bowden and his sales team, at a time when a Ferranti computer cost about £85,000. Ferranti's sales strategy consisted of Bowden going 'on the road' in search of orders, while the Ferranti board did its best to effect sales though its not inconsiderable contacts in the government and military spheres. These contacts had been widened by Ferranti's partnership with the NRDC (National Research Development Corporation), a linkage which also brought with it considerable financial support. In 1951 the NRDC agreed to place a contract with Ferranti for four computers on the basis of cost plus 7½ per cent profit, and in addition the firm was to receive 2½ per cent of the price as selling commission as a reward for success in 'using their best endeavours to find customers'. The NRDC connection was to be an important factor in the development of the Ferranti Computer Group.

Bowden recalled his early adventures in trying to sell computers with fond nostalgia, even though he found it a 'terribly uphill' task.[18] The problems were, after all, immense. The potential for computers was unknown, with expert opinion advising that the demand would be limited. Professor Douglas Hartree at Cambridge University, one of the foremost mathematicians of his day with a wide experience in mechanical and electro-mechanical methods of computation, reportedly told a Ferranti salesman that they were wasting their time. Hartree said: 'We have a computer in Cambridge, there is one in Manchester and at the NPL. I suppose there ought to be one in Scotland, but that's about all'.[19] The fact that there would be a shortage of skilled operators, which nearly everyone assumed had to be trained mathematicians, added weight to Hartree's pronouncements. Moreover, computers had not yet been adapted to customary procedures, though it was soon evident that this would be a crucial consideration. The NRDC's expert programmer and computer consultant, Christopher Strachey (1916–75), perceptively summarised the situation in 1952. He remarked that already:

> the first phase of the development of large digital computers is now virtually over. There are now more than a dozen large machines already operating in America, and rather more than a hundred more (mostly copies of these) are either in the course of production or projected. These machines are all characterised by being primarily the child of the engineer. Their logical design was laid down before there had been any opportunity to get experience in using a computer of this type. The main problem in this phase has been to get a machine which worked at all and as a result features which appeared desirable from a programming point of view have often been sacrificed to simplify the engineering problems. Now that these machines are coming into use in fair numbers there has been a very marked shift of emphasis. The major problem now seems to be to use the machines properly.[20]

The Manchester machine used paper tape, and no work had been done in adapting it to the office environment where punched cards were in use. Bowden certainly appreciated the potential of using the computer in commercial work, proposing in November 1950 'to make a more detailed study of this important application of digital computing machines'.[21] But the complexities of the problems involved and the pressing nature of the scientific calculations that were waiting to be run on the Manchester machine inevitably meant that such work had to be temporarily postponed. Above all, the Manchester machine was an unreliable beast. In May 1952, for example, it was reported that the Mark I had operated routinely for 75 hours: 57 hours of these had been usefully employed in computation, but 18 hours had been lost due to a faulty cathode ray tube (10 hours) – 'as this happened to be the B-tube, which plays a key part in the logical design of the machine, it was extremely troublesome' – and eight hours were lost in minor faults.[22] This was regarded as a creditable performance, though obviously it would not have been a very positive selling point either for the buyer or Ferranti, especially if the machine was located a great distance from the works.

Thus, as both Bowden and his successor Bernard Swann remarked, selling was 'interesting and often exciting, but unrewarding. Time and again we could only report that, after customer visits, that they were showing a keen interest, but no order'.[23] Prospective purchasers were unconvinced of the advantages of the machines, or were put off by their price and unreliability. The purchasing controller of ICI, for example, stated that his firm would never pay more than £50,000 for any one instrument. Many preferred to 'wait and see', allowing others to make the early running. Typical was the response of Short Brothers & Harland, which in 1953 was reported to be:

> cooling off because they said that they could not carry the whole cost of the machine by themselves and indeed they doubted whether they could employ it full time or on an economic basis. They had said . . . that, if there were a possibility that one or two other substantial bodies in Northern Ireland might be prepared to pay fees to use the machine, the firm might take a different view of the matter and they would be prepared to give consideration to joining some kind of consortium interested in installing the machine in Northern Ireland.[24]

The Metal Box Co. provided another example of the patience that was required to sell a computer in Britain in the 1950s. A representative of that firm attended the launch of the Mark 1, but it took twelve years of selling effort before Ferranti sold them a computer.

Nevertheless, there were enough successes for the Ferranti team to believe that they were making progress. Apart from the sale to Manchester University, Bowden's personal approach scored a coup when he sold a Mark I computer to Toronto University (this machine is discussed in greater detail below). In 1952 the Shell Co. had become interested and after visiting Manchester ordered a machine in the following year at a cost of about £95,000. The managing director of the NRDC, Lord Halsbury, wrote: 'Shell have definitely bought a computer at the price asked. This is our first firm sale and needless to say I am very pleased'.[25] But it was also clear that the Mark I (and its successor the Mark I*), which needed elaborate installation procedures and expensive maintenance staff, would only be suitable for a small class of customers. As will be evident from Ferranti's sales of the Mark I (see Appendix), the firm relied mainly on a solid but limited customer base – the government and the military – which had purchased the computers for scientific calculations.

Clearly, Ferranti needed a smaller and cheaper computer aimed at the commercial market if it was to sell large numbers of machines. Here, though progress was slow. Professor Blackett was interested in the commercial application of computers and at a meeting with Bowden and Swann in 1952 he outlined his ideas for a PAYE computer. It had been found after experiments on the Mark I that the cost of preparing a payroll was very much the same as when done manually, but computers could also use the wages data for building up cost accounts and statistics. But the experiment also highlighted one of the problems of commercial work – each type of task was full of rules unique to that problem. In fact, Ferranti at this time would usually tell potential customers that initially the numbers of staff would have to be *increased* – a fact which astonished the representative of one punched-card firm, who wondered how Ferranti ever sold a computer. The problems with the commercial market, and the fact that Ferranti were slow to design a suitable magnetic tape/card interface, meant that the firm concentrated on its strengths – the use of the computer for scientific rather than accountancy problems.

II

The Search for a Winner

In the early 1950s Ferranti possessed a number of clear advantages over both their domestic and international rivals. Their technical knowledge, boosted by the Williams-Kilburn partnership at Manchester

University, placed them in the forefront. The Ferranti name itself provided an important selling point. And the company's selling expertise, under a team headed by Bernard Swann (Bowden had left in 1953 to pursue a career at Manchester College of Science & Technology), was growing in strength. Why then did Ferranti not sweep all before it?

The first reason was that computers were only *one* of Ferranti's products. Its main business was in the marketing and production of transformers and there seemed no good reason, at least in the early 1950s, why computers should take precedence. They were, after all, a highly speculative product. Ferranti was also a family firm – a simple fact which does much to explain its subsequent conservative approach to computers.[26] Sir Vincent de Ferranti (1893–1980) owned the major shareholding and liked to run the business on personal lines. (Bowden recalled how matters were discussed over 'high-table' with fellow directors, with each one daily taking turns to carve the joint of meat.) This family set-up was to cause frustrations to those, such as Lord Halsbury at the NRDC, who were keen to push British firms into the computer age. Halsbury neatly summed up the Ferranti attitude when he wrote in 1954:

Manchester University Mk I control desk, July 1952 (Source: National Archive for the History of Computing, Manchester University)

> The Ferranti family own the whole of the equity capital in Ferranti Ltd.; [they] have all the money they need for personal purposes and money is not an object of interest to them; they are in business for fun and will therefore under no circumstances agree to any proposition whatever that is from their point of view not so funny; in particular they will not open one crack, cranny or crevice whereby any third party could gain a permanent toehold inside the Ferranti group of enterprises; if Sir Vincent were looking for a new enterprise to invest Ferranti money in, he would not himself pick computers. He has, however, no objection to a Government agency picking computers for him provided that he is fully compensated for the use of Ferranti facilities.[27]

This hard-headed attitude enabled Vincent de Ferranti to expand his firm so that by 1963 it was among the first three British companies (by sales) in electronics and aircraft instrumentation. But it also meant, as Halsbury was wont to highlight, that the Ferranti computer group lacked direction and was a 'cackle of competing voices'.[28] Halsbury told F.C. Williams: 'I am frankly distressed at the lack of leadership in Ferranti. There seems to be no one there with a capacity for clear-cut strategical thinking who is at the same time prepared to give his mind to the subject. No one at their higher levels has taken over the leadership of the team, and no leader has emerged from the working levels of the business'.[29] In these circumstances it proved difficult, for example, even to cost computer production accurately. Complained Halsbury in 1953: 'Ferranti base their quotations on a notional cost price without any proper attempt to cost out. It became clear that they had no proper notion of costs and did not very much care, for if, in the present case, for example, the prime cost rose from £50,000 to £55,000, our profit would suffer a corresponding reduction and Ferranti would fold their hands and look smug'.[30] Such slipshod accountancy probably led to significant undercosting for Ferranti computers and a loss in profits.

Moreover, Ferranti's technical lead was not easily translated into orders. Crucially, the original techniques that had brought the Ferranti Mark I into being could not be used to make the more moderately priced and more easily maintained machines that the times were to require – at least, not without a great deal of commitment and finance. Ferranti needed a winner – a popular, moderately priced machine – but given Ferranti's attitude to the business this could only happen through an alliance with another firm. Since Ferranti knew it would need to use punched cards, an agreement with the two British firms in this area – the British Tabulating Machine Co. (BTM) and Powers Samas – seemed logical. Each had a good deal of commercial systems knowledge and a large customer base which would be tied to them for some time.

Powers emerged as the likeliest candidate and in 1952 negotiations began, which were based on two principles: the two companies should collaborate in designing a small computer for the commercial market; and the Powers Samas sales team would take over the selling of Ferranti computers. The latter seemed to have particular attractions for Vincent de Ferranti, who felt that the firm's problems lay in marketing (whereas the Ferranti sales team felt that production and prompt deliveries held the key). The negotiations were to extend many years, but were not counted a success by Ferranti. The protracted discussions failed to produce a new computer, though a Powers card input/output system was to be added to the Pegasus computer in 1958 under the name of Pluto. The only significant project – the Perseus computer, which had been developed specifically for insurance work – resulted in only two orders after its arrival had been delayed by possible conflict with Powers' projects. The plans for the collaboration in sales did not work well, due to inevitable conflicts of interest. Powers produced no new orders in five years, though its intervention frustrated the efforts of the Ferranti sales team and resulted in lost business. Sir Vincent de Ferranti later said that the only thing he got out of the Powers negotiations was a fancy nutcracker for Christmas!

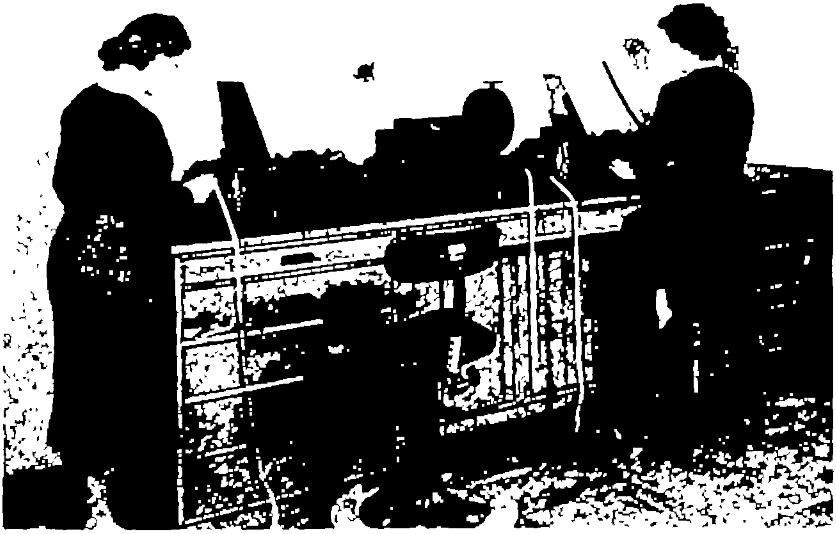
Not surprisingly, Ferranti's commitment to collaboration was less than wholehearted. Meanwhile, other opportunities soon presented themselves. In 1953 there had been a break up of the Elliott Bros. computer team at Borehamwood, which resulted in (Professor) W.S. Elliott joining Ferranti. He brought with him the modular packaging technology that was to be used to such good effect in the Elliott 400 computer series. Here the design emphasis was on the use of standard, interchangeable circuit modules, instead of the laborious 'hand-built' methods employed in such computers as the Manchester Mark I. Ferranti soon embraced this design philosophy, which had been heavily influenced by Christopher Strachey. Under Elliott, and with financial support from the NRDC, they began building the so-called Ferranti Packaged Computer No. 1 (FPC1), later renamed the Ferranti Pegasus.

III

Pegasus and the Competitive Scene

The Pegasus proved popular and gave Ferranti a relative 'best-seller'. It has been described as the most elegant British machine of its generation, with a reputation as a trusty work-horse, well-suited to a large number of programs, inexpensive to maintain, and through long-service even inspiring affection in its users. Thirty-eight were made (see Appendix). Half were sold for research work in government and industrial establishments; seven were sold for aircraft calculations; and four were sold for commercial work. However, the Ferranti salesman felt that more than double this number should have been sold.

Ferranti was certainly as well placed as any of its competitors when Pegasus 1 appeared on the scene in 1956. The sales force, managed by Bernard Swann, numbered 18, all except one being graduates. There were also 11 graduates in the Ferranti Programming Research Group, which included (Professor) Stan Gill from Cambridge and four women. The latter provided the link between technical developments and customer problems, which surfaced at Ferranti's London showroom at 21 Portland Place. The London computer centre, which was operational by 1955, was a direct initiative of the Ferranti sales team, and a highly successful one. Here visitors came to learn programming and try out solutions to their problems, thus not only generating income but also (as Ferranti knew) familiarising themselves with Ferranti machines for



Tape editing equipment, Ferranti Mark I Computer at Manchester University, 1951 (© Ferranti Archives) which they would be likely purchasers. Ferranti printed and distributed a considerable number of typescript memoranda (the CS Lists) describing problems that had been run on Ferranti machines.[31] These had a wide distribution. The sterling work of Ferranti's programmers, such as George Felton, ensured that a wide range of programmes were available for the Pegasus, which naturally increased its saleability. The Pegasus programming system itself, demonstrating the virtuosity of Christopher Strachey, has been described as 'a high point in programming in Britain during the 1950s and had great influence'.[32] Ferranti's experience in commercial work had been growing rapidly and by 1956 included wages calculations, index numbers, transportation problems, linear programming, inventory control investigation and airline seat reservation problems. Selling obviously involved educating the customer, and by 1956 Ferranti had already run three courses on computing, each of which lasted about two weeks.

No other English computer manufacturer was so well placed to attack the market.[33] BTM had only slowly developed an effective selling operation in the early twentieth century; indeed, it has been said that this failure was the main reason for the relative disparity in performance between BTM and IBM in the inter-war period.[34] By the 1950s BTM had an impressively large regional sales force, including a staff of 12 at BTM headquarters to publicise digital computer applications. However, BTM lagged behind Ferranti in digital computer technology and the firm admitted that it was only slowly seeking orders for data-processing. English Electric employed a staff of 20 programmers on the DEUCE computer, which functioned as the service division of the company, but developments were still in their early stages. On the technical sales side, English Electric only employed two men, neither highly qualified as programmers; and training courses had still to be developed. As a comparison, Elliott Bros. and LEO Computers Ltd. both had sales teams of about 15, and both were running training courses (Elliotts was running one on the 'Application of Computing Machines to Business Organisation'). As for IBM UK Ltd., it hardly featured at this time. Only one IBM 650 had been installed in the UK by this date and the British operations were only beginning. This was reflected in the sales and programming staff, which numbered ten, with only two or three with any appreciable experience.

Ferranti, however, was unable to turn this situation to its competitive advantage. On occasions, it is true, the sales team and engineers worked smoothly and a customer was hooked. The Royal Aircraft Establishment, for example, had virtually decided to buy an Elliott computer. But C.A. Wass, who was in charge of the mathematical section of the RAE, telephoned Swann to say that as a good civil servant he should check on what Ferranti was offering. Ferranti arranged to receive him and Elliott organised a team, nominating one of each group designing the parts of the computer – circuitry, magnetic drum, magnetic tape system, input/output equipment – while Felton from the sales department demonstrated the programming facilities, so that all the questions could be dealt with. The RAE was impressed and Ferranti won the order.[35]

Generally, however, the peculiar situation of the Ferranti computer group provided a great stumbling block. Ferranti salesmen were unable to seek orders openly for commercial work because of an agreement with Powers that they could only negotiate with purchasers who approached them directly. So Ferranti gained a reputation for 'selling from the shop' at Portland Place, a policy which suited a Ferranti management who were concerned to keep sales costs to a minimum. Ferranti had 50–80 visitors weekly at its London office; naturally, a much larger staff would be required to visit customers at their own offices. The limitations of such a policy are obvious. They were to be compounded by production difficulties that brought Ferranti another reputation – for late deliveries. Plans for the development and production of the Pegasus became awkwardly split between Manchester and London, reflecting the differing ideas and personalities of W.S. Elliott and Brian Pollard, the head of Ferranti computer production in Manchester. Elliott (and Swann) recognised the opening for a saleable product, such as the FPC1, while Pollard's energies were directed towards the powerful, but expensive, Manchester Mark II computer (eventually marketed as the Mercury). Finally, Ferranti allowed Elliott to concentrate his activities in London, though he remained nominally responsible to Pollard, under whom production of the FPC1 went ahead. It was not a happy arrangement. According to one study: 'The main practical outcome of all this during the first year of the project seems to have been that Bill Elliott spent much of his time planning to enlarge his London laboratories so as to establish his independence from Pollard, while Pollard did what he could to frustrate this, largely by refusing to transfer much-needed staff to London'.[36] The Pegasus project suffered. Production was slow to begin and costs were so uncertain that for a period of nine months in the middle of the sales drive Swann and his men were unable to give quotations. Costs of the Manchester and London operations escalated rapidly, to the consternation of the NRDC, which was left wiser but poorer after the affair.

IV

Scientific Computers Again

As Pollard's stance demonstrated, Ferranti had by no means abandoned the market for big scientific computers. Indeed, given the input of the Manchester University team, with its strong bias towards technological innovation rather than user convenience, and Ferranti's own interest in the defence market, this was inevitable.

By 1952 the Manchester University engineers were ready to utilise their expertise gained with the Mark I in constructing a faster, more reliable and more easily programmed machine. This was nicknamed MEG (Megacycle engine), which later entered production as the Ferranti Mercury. Twenty times faster than the Mark I (though more compact), Mercury pioneered the use of floating-point arithmetic, and had a provision for a magnetic core store instead of the old cathode ray tubes of the Mark I.

Mercury was aimed at large-scale scientific users, such as government establishments, which could make use of its undoubted speed – the Mercury's chief selling point. Compared to American machines Mercury was also relatively good value. Technically, it was a major achievement:

The Atlas Laboratory at Harwell (Chilton) about 1968 (Source: National archive for the History of Computing, Manchester University) it proved that big computers could be made reliable enough, and the greater speed increased the throughput of jobs and opened up bigger markets, such as in aircraft design. But the greater complexity of Mercury stretched Ferranti's production team to the limit and soon the firm had difficulty once more in meeting orders. The lack of better input/output facilities, particularly for using punched cards, also proved a problem. Here again the Powers link did not produce the goods, with the result that Ferranti had to provide its own elaborate and costly punched card units for oil company buyers. By the time these units were supplied they were already outdated.

Mercury in some ways reflected the Ferranti production team's obsession with technological advance to the detriment of commercial considerations. According to Swann: 'In Manchester there was always something of an "anti-sales" attitude: Manchester University always felt that so remarkable a product as a computer should sell itself, and were impatient of "sales points", if they interrupted the research work'.[37] This was perhaps also reflected in the fact that Ferranti never advertised in the press or produced large quantities of glossy brochures (though it did produce a few). This neglect of promotional literature became important later, when it brought forth at least one complaint. A.V. Roe, one of the early Ferranti customers, requested information on computers for production control. When Swann said that Ferranti would like a close look at the job first, the managing director replied: 'that was the trouble with the English companies; they all wanted to look at the job, whereas IBM gave [me] a booklet which showed [me] how to do [my] production control'. Recorded Swann: 'He waved a slim and colourful pamphlet and installed IBM equipment'.[38]

The Ferranti salesman, of course, took a broader view: they wanted a computer they could go out and sell – such as the Pegasus – and remained sceptical of the market for the Mercury. Nevertheless, Mercury sold reasonably well, mainly because a promising (and unpredicted) demand emerged from the atomic energy industry. Eighteen Mercurys were sold and the technical approach had, to some extent, been vindicated. But with its next major project – the Atlas – Ferranti was not to be so lucky.

It was the Americans who indirectly provided the stimulus for the Atlas computer. By 1956 there was concern amongst leading British computer scientists and government officials, especially the NRDC, at the USA's increasing technological superiority in computer manufacture. In particular, the Remington Rand LARC and the IBM Stretch projects, raised the spectre of future American dominance. To counter the threat Lord Halsbury and the NRDC attempted to convince British manufacturers and government establishments of the necessity of some kind of national fast computer project. In the absence of a satisfactory consensus, however, Halsbury's efforts had largely foundered by the end of the 1950s.[39] But Ferranti, one of the early bidders for the project, had pressed on regardless with the development of its Atlas computer.

Atlas followed the usual Ferranti pattern: collaboration with Manchester University and a measure of financial support from the NRDC, with Ferranti providing the production and sales know-how. Again, the result was a technical success. Designed specifically to meet the needs of the large-scale computing and data-processing centre, the Atlas became one of the most influential computers ever built. On its official inauguration in December 1962 it was considered to be the world's most powerful computer, into which Tom Kilburn and his team had built a number of enduring innovations. Particularly notable was the use of 'virtual memory', a paging system which expanded the effective fast memory by automatically transferring blocks of material between it and the backing store. There was even a pioneering provision for time-sharing terminals, though rising production costs meant that this could not be implemented in the final model.[40]

This technical triumph, however, was not rewarded in the market. After the experience with Mercury, the Ferranti sales team had their eyes on the universities and the nuclear energy centres, and also (as will be described below) intended to explore the overseas market. But two things blunted their efforts – cost and time – both of which reflected the tremendous burden that the Atlas project had placed on Ferranti's limited resources. When Atlas went on sale the price tag for the cheapest machine was over £1 million. The long development period also allowed US manufacturers to step into the field, such as the Control Data Corporation. CDC actually benefited from the early publication of some of the ideas behind Atlas (a classic example of a British manufacturer paying the penalty for an early start) and this helped the American firm overtake Ferranti.[41] CDC's 6600, designed by Seymour Cray, had improved time sharing and better peripheral equipment than the Atlas and so was able to take its place in the scientific computer market. The result was that only two Atlas computers were sold: one to the UK Atomic Energy Authority (for £3½ million) and the other to London University. A subsequent exchange of hardware and design know-how with Cambridge University resulted in Atlas 2: but only one of these was sold, again to the UKAEA. Finally, any chance that the Ferranti salesman had to secure a market for the Atlas was effectively ended in 1963 when the Ferranti computer interests were sold to ICT.

The latter decided to concentrate on the 1900 series computers and Atlas was scrapped.

V

International Marketing

Ferranti had some hopes that its computers would sell well abroad. Indeed, the first Mark I computer that was sold was bought by the University of Toronto, as a result of Bowden's salesmanship. Professor Watson of that university wanted the distinction that his university should be among one of the first establishments in the world to have a computer; and, more importantly, the university wished to help the Canadian Government in its share of the design and cutting of the St Lawrence Seaway. Installing the FERUT (as it came to be known), which was not far beyond the prototype stage, thousands of miles from Manchester was a considerable challenge to Ferranti. On the whole it was met successfully, though inevitably there were considerable teething problems. The project provided another opportunity for the talents of Christopher Strachey, who developed the programme for calculating the effects of the new seaway on the water flow of the river past the Thousand Islands. According to Bowden the performance of FERUT gave the Americans 'the fright of their lives' and a 'giant inferiority complex', with the Canadians scoring some political advantage over the Americans when they were able to insist that their designs has some priority.

Canada was to provide Ferranti with an important springboard for a subsidiary venture, Ferranti Electric Ltd. (later Ferranti-Packard), based in Toronto. Here engineers, led by the Manchester University-trained technologist Dr Arthur Porter, were responsible for important pioneering designs in the mid-1950s. They built a naval data acquisition and target tracking system that included the first computer network in which three physically separate processing systems were interconnected through radio channels and operated as a single system. This was copied by the Americans. Ferranti-Packard also built the FP6000, the world's first time-sharing, multi-tasking machine, which in the mid-1960s was used in the UK as the basis for ICL's 1900 series.[42]

In terms of sales, however, Ferranti were unable to capitalise on this success. It did bring the firm useful publicity, but the reliability problems of the FERUT (which were reflected in the fact that the chief maintenance engineer was working over 60 hours per week) did not prove a good advertisement, especially since it was obvious to the Americans that they would soon have machines of their own that would be more efficient. The input/output facilities of the FERUT were also limited, due to the fact that customer requirements in this area had never been properly studied. Strachey had strong reservations about the applications of the Mark I to commercial use. 'To put it bluntly', he wrote after his North American trip in 1952, 'I think it is a waste of time to try to sell the present Ferranti machine to large commercial firms . . . as an all-purpose machine'.[43]

Evidently, Ferranti did not entirely agree with Strachey's assessment. A member of the Ferranti board had also visited the USA in 1952 and 'came back convinced that we now have the best machine available. We ought to be able to sell lots of them'.[44] Another Ferranti man believed that 'so long as our price is right, the US market is not closed to us'.[45] This belief seems to have been fostered by some early enquiries from American firms and Ferranti's initial assessment of US computer prices, which it believed it could easily better. In 1953, for example, Ferranti was approached by the Sandia Air Base in New Mexico, part of the American Atomic Energy Commission. A Ferranti sales representative wrote: 'our main competitor seems to be the Remington Rand Company. [They] have offered to allow the customer to pay for the machine over a period of three years from the date of delivery and the head of the Sandia Corporation has told our manager that he prefers such an arrangement to an outright purchase on normal terms. In the event of our being able to offer something similar we may stand a chance of getting the order since our price is substantially lower than that quoted by Remington Rand'.[46] Other enquiries were from the Tennessee Valley Authority and A.C Nielsen, which specialised in market research for advertising. Bowden had met the manager of Nielsens in Chicago as early as December 1950, when he reported that the firm was 'very anxious to get a machine from somewhere. They would obviously prefer to buy it in America, but are prepared to consider buying one here if need be'.[47]

Bowden set off on a tour of possible American customers to clinch such prospective deals but he had no success. The firm's technical lead and its slightly lower price were little recommendation to US buyers who happily awaited their own firms' entry into the market. American purchasers' hesitation to buy British, whether from conservatism, patriotism, or shrewd assesssment of Ferranti's ability to supply the goods, gave US makers the chance to make up lost ground. Ferranti's lead proved more apparent than real, especially in view of the work that was required in providing software and peripherals for the new machines. As Bowden admitted, despite the early interest of A.C. Nielsen, 'a complete solution to [their needs] will await our construction of more elaborate input-output equipment'.[48]

This situation was to recur when Ferranti again established a technical lead with the Atlas. In about 1961 Ferranti scouted the potential American demand by sending John Fotheringham to spend some months there. In 1962 Ferranti followed this up by engaging a Plessey man, Dr David G. White, to launch a sales campaign in America. There seemed to be considerable possibilities amongst the atomic energy authorities, the aerospace industry and government departments. But after an early flicker of interest the Americans proved reluctant to buy British. The Atlas was only slowly coming into production, CDC was about to enter the market, and none of the potential American purchasers wished to be the only buyers of Atlas. With Ferranti's reputation for late deliveries it was certain that the Americans would demand penalty clauses in the contracts, thus forcing the British firm to put huge capital sums at risk. Atlas was thus unable to improve Ferranti's sales performance in the USA: in over a decade the firm never sold a single computer there – a remarkable contrast to the performance of Ferranti's transformer department, which during the period 1945–60 had sales of £3 million in America. In fact, foreign sales (shown in Tables 1 and 2) of Ferranti computers were poor. Only a handful of countries – Canada, Australia and Sweden – purchased more than one Ferranti computer. This was not because Ferranti ignored these markets. In Italy, for example, Bowden was especially energetic in pursuing the early interest shown by the Italian Government. Bowden was given to understand that 'negotiations of this kind are conducted in Italy in a rather unusual way which involves a fair amount of what one had perhaps best describe as "rather delicate personal negotiations"'.[49] Even after much negotiation, however, the Italians only bought one machine.

The Australian market, which Ferranti had earmarked for special attention, also showed how the company had difficulty in translating its hard sales effort into potential orders. The firm already had contacts in Australia through its transformer business; government organisations there, such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO), were preparing to install large computers; former Ferranti men (such as Professor John Bennett) were active in Australia and were likely to look on the firm with a friendly eye; and the Atlas might have a large potential in a country as large as Australia. In 1961 Ferranti decided to open a sales office in Melbourne under Barry de Ferranti to press home this advantage. A Ferranti Sirius computer – a spin-off from the Orion computer, that had been developed at about the same time as the Atlas – was sent out and a successful sales and service centre was created. Again the sales prospects looked promising: CSIRO had over £1 million to spend, possibly on an Atlas; while the universities seemed ready to order the medium-to-large computers of the Orion type. Production difficulties, however, dogged the Orion so that Barry de Ferranti had only the Sirius to sell (eventually he sold four). As regards the Atlas, it was a familiar story: though keen to buy British, the CSIRO eventually bought a CDC 6600, which was at a more fully commissioned stage than the Atlas and cheaper.

TABLE 1

FERRANTI COMPUTERS SOLD, 1949–63

Computer	Date Launched	Total sold	Overseas sales
Mark I	1951	2	1
Mark I*	1953	7	2
Pegasus 1	1956	26	3
Pegasus 2	1959	12	1
Mercury	1957	19	6
Perseus	1959	2	2
Orion	1963	13	1
Sirius	1960	16	6
Atlas	1963	3	0

Source: see Appendix.

TABLE 2

FERRANTI COMPUTERS: OVERSEAS SALES

Country	Sales	Country	Sales
Sweden	5	Germany	1
Australia	4	Holland	1
Canada	2	Italy	1
Argentina	1	Norway	1
Belgium	1	South Africa	1
Czechoslovakia	1	Spain	1
France	1	Switzerland	1

Source: see Appendix.

VI

Conclusion

By the end of the 1950s the Ferranti computer department was clearly losing money. By 1963 the firm had sold 99 computers, which had generated nearly £25 million, but this was nowhere near enough to cover production and development costs. The result was a loss of £4 million. At the end of 1962 Ferranti began negotiating with ICT for the sale of the computer department, which duly took place in December 1963. According to one source, this was due to the fact that Ferranti had realised that 'successes in the computer business depended on a marketing operation and a base of data-processing users that Ferranti did not have and ICT did'.[50]

The subsequent story – the merger of British firms into a national flagship, ICL, against the backdrop of growing American dominance – is well known and has been described elsewhere. Here an assessment is confined to the selling and marketing aspects of Ferranti's operations. To what extent was failure in this sphere responsible for Ferranti's disappointing performance?

It is often said that the British are excellent innovators and manufacturers, but poor salesmen. This paper certainly provides some evidence for such a view. Amateurish marketing techniques, muddled costing procedures, inappropriate sales strategies and poor co-ordination between R & D and marketing characterised Ferranti's rise as a computer manufacturer. However, it must be remembered that these deficiencies occurred in a period of intense and unparalleled technical advance. Moreover, they were by no means unique to Ferranti.

Similar problems were also evident in Ferranti's rivals. LEO Computers Ltd. became carried away with pioneering a new technology and failed to consider the needs of the ordinary customer. At LEO it was said that marketing was almost unknown.[51] The office machinery firms in the UK were slow to realise the implications of the new technology, while the electronics companies such as Elliott and English Electric were, like Ferranti, attracted to the scientific and military markets. In the 1960s when business computing went into high gear, the military electronics producers continued to focus on the small and specialised defence and scientific market, while the Americans took over the business sector. By March 1965, British computer manufacturers had sold less than 600 machines worldwide, whereas the Americans had installed over 20,000. By that date US penetration of the British computer market was reaching 50 per cent.

Yet even in America the pioneering computer entrepreneurs found it difficult to assess and market the new technology effectively. Two of the leading technologists, J. Presper Eckert and John Mauchly, formed a business partnership in 1946 to exploit the experience gained during the war. By 1950, although they were well on the way to developing and marketing a commercial computer (the UNIVAC) ahead of the competition, their company was bankrupt and had been sold to Remington-Rand. They had seriously underestimated development costs and failed to contract with the government on a cost-plus-fixed-fee basis; they had allowed technical staff to determine business policy; and directed too much of their efforts at perfecting devices, sometimes at the expense of bringing them to fruition.[52] A.C. Nielsen, the marketing research firm that had approached Ferranti, for example, had started negotiations with the Eckert–Mauchly Computer Corporation in 1946. An order for a computer was placed at $150,000, to be delivered within a year. But Eckert and Mauchly were unable to complete the contract and Nielsens, after toying with the idea of acquiring a controlling interest in the EMCC, finally turned to the competition – IBM – which put a computer on the market in April 1953. IBM itself had been extremely conservative in the face of the new technology, refusing to move out of its traditional office machinery market without government backing.[53] Studies of some of the smaller US office machine and calculator companies, such as Remington-Rand, National Cash Register, and Underwood paint a similarly conservative picture: firms kept a watchful eye on the emerging technology, but were reluctant, like Ferranti, to make large-scale commitments.[54]

On these terms, Ferranti's performance was a creditable one. What faults there were do not appear to have been primarily the result of sales and marketing deficiencies. Bernard Swann appears to have built up a vigorous sales team, which, when it had the right product, performed well. In fact, in view of Ferranti's production problems, it may well have been that the only result of even more efficient selling techniques would have been a longer backlog of orders. Even Lord Halsbury, in his more detached moments, expressed satisfaction with the Ferranti sales department, telling Vincent de Ferranti that he 'considered there was no complaint on the score of their selling effort'.[55] Two things, however, blunted that effort: one was the nature of the British market; the other was the peculiar position of the computer department within the Ferranti firm.

Ferranti, like other British computer manufacturers, eventually found itself competing with American firms which were underwritten massively by the resources of the US government. As Lord Halsbury noted, in the USA the government fully supported the rise of the data-processing industry and came forward with orders in a way that was not evident in the UK. America ploughed enormous resources into computer development, especially for military applications.[56] It was no coincidence that the take-off in the American computer industry occurred during the Cold War. During the 1950s IBM alone was awarded contracts totalling nearly $400 million; while Halsbury's NRDC had a total budget of only £5 million for the whole of the UK industry, and was, moreover, expected to be self-financing. In the 1960s the results of such policies were apparent: by 1964 it was estimated that there were almost 22,000 computers installed in the US, including approximately

1,767 in civil government, 2,000 in the Department of Defense, and another 2,000 or so used by government contractors at the state's expense. In contrast, less than 1,000 computers had been installed in the UK by the same date, of which only 56 were in civil government departments.[57] The implications of this in America for the development of core computer technologies, commercial spin-offs and the training of personnel can hardly be over-estimated. IBM employed something like 300 graduates on the Stretch supercomputer programme; while Ferranti never had more than 25 programmers working on the Atlas. Although this represented an exemplary use of manpower, eventually the greater American resources told against Ferranti, leading to late deliveries and the loss of the Atlas's dominant position. American industry was also more enthusiastic. Halsbury's criticisms of Ferranti were tempered by his concession 'that the enthusiasm of the American user was a big factor in determining the rate at which progress can be made by a manufacturing and development centre. In England potential users are not enthusiastic'.[58] The 'conspicuous lack of initiative and enterprise' of British managements was also criticised in the contemporary press.[59]

If Ferranti had been fully committed to computer development it might have held its technical lead long enough to secure a commercial niche in the market. But this was not the case. The Ferranti family refused to commit greater resources to both production and marketing and its position, despite its pioneering stance, remained basically conservative. Significantly, as the computer industry began to take off, the Ferrantis placed their money where it was safest – in small defence computing systems or in control systems computers that were spin-offs from military contracts. In 1962 Ferranti sold the first of nearly 100 Argus process control computers, and thereafter the Automation Systems Department at Ferranti grew steadily. Other Ferranti defence computers included the Poseidon, Hermes and F1600 (also sold as a commercial product). Ferranti's military computing department at Bracknell also began to grow rapidly in the 1960s and appears to have been consistently profitable. This defence work had the advantage that it could also be applied to non-military applications. When Ferranti sold off its computer interests to ICT, the defence computing section of the company was retained. By the mid-1980s Ferranti Computer Systems Ltd. had emerged amongst the top ten UK computer manufacturers.[60] In retrospect, it appears that Ferranti got the computer business it wanted – a profitable niche in the defence market; unfortunately for the British computer industry, this was not a strategy which allowed it to remain amongst the leaders of the world computer industry.

NOTES

A preliminary draft of this article was read at the Deuxième Colloque sur l'Histoire de l'Informatique en France, Conservatoire National des Arts et Métiers, 26 April 1990.

1. In the preface to *Faster than Thought: A Symposium on Digital Computing Machines* (1953), B.V. Bowden wrote: 'It seems probable that we shall have a second Industrial Revolution on our hands before long'. On Bowden, see below.
2. M. Campbell-Kelly, *ICL: A Technical and Business History* (Oxford, 1990); J. Hendry, *Innovating for Failure: Government Policy and the Early British Computer Industry* (Cambridge, MA, 1990).
3. R.P.T. Davenport-Hines, *Markets and Bagmen: Studies in the History of Marketing and British Industrial Performance, 1830–1939* (Aldershot, 1986). For a comparison, see R.S. Tedlow, *New and Improved: The Story of Mass Marketing in America* (1990).
4. See S. J. Nicholas, 'The Overseas Marketing Performance of British Industry, 1870–1914', *Economic History Review*, 2nd series, Vol.37 (1984), pp.489–506.
5. W. Aspray, 'Marketing the Monster: Advertising Computer Technology', *Annals of the History of Computing*, Vol.8 (1986), pp.127–43.
6. S. H. Lavington, *History of Manchester Computers* (Manchester, 1975); idem, *Early British Computers: The Story of Vintage Computers and the People Who Built Them* (Manchester, 1980).
7. T. J. Watson Jr. and P. Petre, *Father, Son & Co: My Life at IBM and Beyond* (1990), p.242. See also W. Rodgers, *THINK: A Biography of the Watsons and IBM* (1970). The following books (only a selection of the most recent and informative) provide further information on IBM's history and marketing policies: S. Engelbourg, *International Business Machines: A Business History* (New York, 1976); F.M. Fisher *et al.*, *IBM and the US Data Processing Industry* (New York, 1983); Michael Killen, *IBM: The Making of the Common View* (Boston, 1988); W.W. Simmons, *Inside IBM: The Watson Years, A Personal Memoir* (Bryn Mawr, PA, 1988); R. Sobel, *IBM: Colossus in Transition* (New York, 1981)
8. For a critical view of IBM's sale tactics, see R.T Delamarter, *Big Blue: IBM's Use and Abuse of Power* (New York, 1986).
9. F. Rose, *West of Eden: The End of Innocence at Apple Computer* (1989), p.38.
10. J. Sculley (with J.A. Byrne), *Odyssey: Pepsi to Apple* (1989). There are a number of popular accounts of Apple and its founders, such as: J. S. Young, *Steve Jobs: The Journey is the Reward* (Barnet, Herts, 1988); L. Butcher, *The Rise and Fall of Steve Jobs at Apple Computer* (New York, 1988).
11. Sugar's philosophy was expounded to the City University Business School in 1987 as: 'Pan Am takes good care of you; Marks and Spencers loves you; IBM says the customer is king . . .; at Amstrad – We want your money'. Quoted in D. Thomas, *Alan Sugar: The Amstrad Story* (1990), p.249. On Sinclair see R. Dale, *The Sinclair Story* (1985). Interesting details on Apricot are presented in J. Harvey-Jones (with A. Masey), *Troubleshooter* (1990), pp.71–98.
12. The main source for this study has been the National Archive for the History of Computing (hereinafter NAHC), Manchester University, which holds the papers of the National Research Development Corporation (NRDC), Manchester University Department of Computer Science and of Dr D.G. Prinz. It also has manuscript material relating to the Ferranti Computer Group, including an unpublished typescript history by its sales manager Bernard Swann, and an extensive collection of Ferranti trade catalogues and manuals. A catalogue of this material is now available. At time of writing (September 1990) Ferranti's own archive at Moston, which includes much relevant material, is scheduled for closure.
13. F.C. Williams, 'Early Computers at Manchester University', *Radio and Electronic Engineer* Vol.45 (July 1975), pp.327–31, 327.
14. NAHC/PRI/C1a, D.G. Prinz, Report of a Visit Made to the USA in September 1948, on behalf of Ferranti.

15. Modern computers are often said to have originated with the ideas and designs of the English mathematician Charles Babbage, though the question as to who 'invented' the first computer is a vexed one. For the best consensus view, see: S. Augarten, *Bit by Bit: An Illustrated History of Computers* (New York, 1984); M.R. Williams, *A History of Computing Technology* (Englewood Cliffs, N J, 1985).
16. *Manchester University Computer Inaugural Conference* (July 1951), booklet reproduced in M. Campbell-Kelly and M.R. Williams (eds.), *The Early British Computer Conferences* (Cambridge, MA, 1988).
17. G. Tweedale, 'Eloge: Bertram Vivian Bowden (1919–1989)', *Annals of the History of Computing*, Vol.12 (1990), pp.138–40.
18. Lord Bowden, interview with the author, 1 Nov. 1988. Subsequent uncited Bowden quotations in the text are from this source.
19. B. Swann, 'The Ferranti Computer Department' (1975), p.13. Hartree did no more than voice the common view of many other mathematicians, who regarded the computer as a scientific device. Even the great American mathematician and computer theorist John von Neumann regarded computers as the tool of applied scientists – quite exclusively!
20. NAHC/NRD/86/4, Christopher Strachey, 'General Conclusions from American Trip: September-November 1952', p.1.
21. NAHC/NRD/86/7, Bowden, 'Ferranti High Speed Digital Computer' (Nov. 1950), p.21.
22. NAHC/NRD/86/9, Halsbury memo, 27 May 1952.
23. Swann, 'Ferranti Computer Department', p.15.
24. NAHC/NRD/86/4, John Crawley to Professor P.M.S. Blackett, 23 Sept. 1953.
25. NAHC/NRD/86/4, Halsbury to J.F. Lockwood, 13 March 1953.
26. For background on Ferranti, see J.F. Wilson, *Ferranti and the British Electrical Industry, 1864–1930* (Manchester, 1988); idem, 'Sir Gerard Vincent Sebastian de Ferranti', in D.J. Jeremy and C. Shaw (eds.), *Dictionary of Business Biography* (1984–6) Vol.2.
27. NAHC/NRD/86/29, Halsbury's notes on a meeting with Ferranti, 23 March 1954.
28. NAHC/NRD/86/9, Halsbury to Blackett, 19 June 1952.
29. NAHC/NRD/86/29, Halsbury to Williams, 8 July 1954.
30. NAHC/NRD/86/4, Patents manager to Crawley, 16 Jan. 1953.
31. The NAHC has a fairly complete collection of CS listed programming literature.
32. M. Campbell-Kelly, 'Christopher Strachey: A Biographical Note', *Annals of the History of Computing*, Vol.7 (June 1985), pp.19–42, 27. See also idem, 'Foundations of Computer Programming in Britain, 1945–1955' (Unpublished Ph. D. thesis, Sunderland, 1980).
33. The following section is based on a NRDC 'Survey of Computer Availability', typescript, c. 1957, in NAHC/NRD/86/4.
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43. NAHC/NRD/86/4, Christopher Strachey, 'General Conclusions from American Trip: September–November 1952', p.2.
44. NAHC/NRD/86/9, Ferranti managing director's report to board, 26 March 1952.
45. NAHC/NRD/86/9, M.E. Sions to D. Hennessy, 24 April 1952.
46. NAHC/NRD/86/4, A. Ridding to NRDC, 28 May 1953.
47. NAHC/NRD/86/7, Bowden to Halsbury, 7 May 1951.
48. Ibid.
49. NAHC/NRD/86/4, Bowden to Halsbury, 21 April 1953
50. Drath, 'Relationship between Science and Technology', quoting Peter Hall of Ferranti.
51. J. Hendry, 'The Teashop Computer Manufacturer: J. Lyons, LEO and the Potential and Limits of High-tech Diversification', *Business History*, Vol.29 (Jan. 1987), pp.73–102.
52. See N. Stern, *From ENIAC to UNIVAC: An Appraisal of the Eckert-Mauchly Computers* (Bedford, MA, 1981).
53. According to Thomas J. Watson Jr.: 'My father initially thought the electronic computer would have no impact on the way IBM did business, because to him punch-card machines and giant computers belonged in totally separate realms. A computer revolution might sweep across the scientific world, but in the accounting room the punch card was going to stay on top.' See Watson, *Father, Son & Co.*, p.189. Even in more recent times, IBM has been slow in following the market trends. See, for example, J. Chposky and T. Leonsis, *Blue Magic: The People, The Power and the Politics Behind the IBM Personal Computer* (1989). Even less conservative firms such as Digital Equipment Corporation (DEC) have found the market difficult to predict. Its founder Ken Olsen, who had a distaste for advertising, failed to appreciate the growing importance of the personal computer market. See G. Rifkin and G. Harrar, *The Ultimate Entrepreneur: Ken Olsen and Digital Equipment Corporation* (Chicago, 1989).
54. C. Burke, 'The Remington-Rand Computer of 1946 and the Development of the American Computer Industry', unpublished typescript (1990), kindly loaned to me by the author.
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56. Halsbury, 'Ten Years of Computer Development', *Computer Journal*, Vol.1 (Jan. 1959), pp.153–9. According to Halsbury, such was the American advantage in this area that: 'the wonder is not that the US industry is some ways ahead of our own, but that our own industry can exist at all in competition with it'. For a fuller treatment of the impact of defence see I. B. Cohen, 'The Computer: A Case Study of the Support by Government, Especially the Military, of a New Science and Technology', in E. Mendelsohn, M. Roe Smith and P. Weingart (eds.), *Science, Technology and the Military* (Dordrecht, 1988); K. Flamm, *Creating the Computer: Government, Industry and High Technology* (Washington, DC, 1988).
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59. R.H. Williams, 'Britain and the World Market for Computers', *The Times*, 11 April 1962.
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APPENDIX

FERRANTI COMPUTER SALES, 1951-ca.1963

Customer	Delivery Date	Scientific Applications	Commercial Applications
MARK I			
Manchester University	1951	Mathematical research	
Toronto University	1952	Mathematical research	
*MARK I**			
Ministry of Supply	1953	Classified work	
Royal Dutch/Shell Laboratories, Amsterdam	1954	Oil refining studies	
Atomic Weapons Research Establishment, Aldermaston	1954	Research Work	
A.V. Roe & Co. Ltd., Manchester	1954	Aircraft design	
National Institute of Application of Mathematics, Rome	1955	Research work	
Ministry of Supply, Fort Halstead	1955	Research work	
Armstrong Siddeley Motors Ltd., Coventry	1957	Research work	
PEGASUS 1			
Ferranti Ltd., Portland Place, London	1956	Computing service	Computing service
Hawker Aircraft Co. Ltd., Kingston-upon-Thames	1956	Aircraft design	
Armstrong Whitworth Aircraft Ltd., Coventry	1956	Aircraft design	Payroll
Admiralty Research Laboratory, Teddington	1957	Research Work	
Royal Aircraft Establishment, Farnborough	1957	Research calculations	
Vickers-Armstrong (Aircraft) Ltd., Weybridge	1957	Aviation design	
ICI Dyestuffs Division, Manchester	1957	Research work	Sales analysis, stock control
NRDC, Northampton Polytechnic, London	1957	Research and training	
De Haviland Aircraft Co. Ltd., Hatfield	1957	Research work	Payroll, budgeting
British Thomson-Houston Co. Ltd., Rugby	1957	Turbine design	Costing
British Iron & Steel Research Association	1957	Operational research	
Leeds University	1957	Research, service work	University registration

Customer	Delivery Date	Scientific Applications	Commercial Applications
Durham University	1957	Research, service work	University registration
Southampton University	1958	Research, service	University registration
Babcock & Wilcox Ltd., London	1958	Research work	Stock control, accountancy
United Steel Co. Ltd., Sheffield	1958	Operational work	
Blackburn Aircraft Ltd., Brough	1958	Research work	Production control research
Svenska Flygmotor A/B, Trollhatten, Sweden	1958	Research work	Production control
Stuttgart University	1958	Research, service work	
Ministry of Supply, Military Survey, London	1959	Survey calculations	
Ferranti Ltd., Hollinwood, Lancashire	1959	Transformer design	Production, wages, service work
C.A. Parsons & Co. Ltd., Newcastle	1959	Transformer design	
Ferranti Packard Electric Ltd., Toronto	1959	Transformer design	
Steel Co of Wales Ltd., Port Talbot	1960	Operational research	
College of Aeronautics, Cranfield	1960	Aircraft design	
Aircraft Armament Experimental Establishment, Boscombe Down	1961	Aircraft design	Data analysis
PEGASUS 2			
De Havilland Propellors Ltd., Stevenage	1959	Aircraft design	
Skandia Insurance Co., Stockholm, Sweden	1959		Actuarial work
Ferranti Ltd., Newman Street, London	1960	Computing service	Computing service
Bruce Peebles & Co. Ltd., Edinburgh	1960	Transformer design	Production control
London & Manchester Assurance Co., London	1960		Insurance/investment
DSIR, Road Research Laboratory, Harmondsworth	1961	Research calculations	Accident record analysis
Shell Research Ltd., Thornton	1961	Technological work	
Vickers-Armstrong (Aircraft) Ltd., Weybridge	1961	Aircraft design	
Martins Bank Ltd., Liverpool	1961		Bookkeeping

Customer	Delivery Date	Scientific Applications	Commercial Applications
Scottish Widows Fund & Standard Life Assurance Society, Edinburgh	1962		Pensions, valuations
Westminster Bank Ltd., London	1962		Bookkeeping
MERCURY			
Norwegian Defence Research Establishment, Kjeller	1957	Atomic energy	
Manchester University	1957	Research, service work	
French Atomic Energy Authority, Saclay	1957	Atomic energy	
UK Atomic Energy Authority, Harwell	1958	Atomic energy	
RAF Meteorological Office, Dunstable	1958	Weather forecasting	
Council for European Nuclear Research, Geneva	1958	Atomic energy	
London University	1958	Research, service work	
UK Atomic Energy Authority, Risley	1958	Atomic energy	
Oxford University	1958	Research, service work	
Shell International Petroleum Co. Ltd.,	1959	Linear programming	Sales analysis
Royal Aircraft Establishment, Farnborough	1959	Aircraft design	
ICI Central Instruments Division, Reading	1959	Chemical analysis	
Swedish Atomic Energy Authority, Stockholm	1959	Atomic energy	
Belgian Atomic Energy Authority, Mol	1959	Atomic energy	
General Electric Co. Ltd., Erith	1959	Atomic energy/design	
Metropolitan-Vickers Electrical Co. Ltd. (AEI), Manchester	1960	Transformer design	
UK Atomic Energy Authority, Winfrith Heath	1960	Atomic energy	
Buenos Aires University	1960	Atomic energy work	
British Petroleum Co. Ltd., London	1961	Linear programming	Sales analysis
PERSEUS			
AB Datacentralen (Trygg & Fylgia Insurance Companies), Stockholm	1959		Insurance policies

Customer	Delivery Date	Scientific Applications	Commercial Applications
South African Mutual Life Assurance Association, Cape Town	1959		Insurance policies
ORION			
Ferranti Ltd., Manchester	1963	Computing service	Computing service
Ferranti Ltd., Newman Street, London	1963	Computing service	Computing service
AB Turitz Co., Gothenburg, Sweden	1963		Stock control/sales
National Provincial Bank Ltd., London	1963		Bookkeeping
Prudential Assurance Co. Ltd., London (Orion 2 replaced Orion 1)	1964		Insurance work
Norwich Union Life Insurance Society	1964		Insurance
Beecham Group, Brentford	1964		Stock control, sales, accounts
Metal Box Co. Ltd., Worcester	1964		Payroll, statistics
Cadbury Brothers	1964		Statistics
Vickers-Armstrong	1965	Design	
SIRIUS			
Ferranti Ltd., Newman Street, London	1960	Computing service	Computing service
Ferranti Ltd., Newman Street, London	1961	Computing service	Computing service
Yarrow & Co. Ltd., Glasgow	1961	Pipe stressing	Technical/external service
Ferranti Ltd., Melbourne, Australia	1961	Computer service	
Cement & Concrete Association, Slough	1962	Frame stressing	
KOVO, Czechoslovakia	1962	Technical work	
ICI, Melbourne, Australia	1962	Scientific/technical	
Ferranti Ltd., Melbourne, Australia	1962	Computing service	
Davy Ashmore	1962	Still making design	
Heriot-Watt University	1962	Teaching	
Admiralty, Bath	1963	Ship design	
British Railways	1963	Technical work	Bonus calculations
Trumpy y Sirvent, Madrid	1963	Computing service	Computing service
Pilkington Brothers	1963	Research	

Customer	Delivery Date	Scientific Applications	Commercial Applications
ATLAS			
Manchester University	1963	Research/service	University registration
London University	1963	Computing service	
UK Atomic Energy Authority	1964	Atomic energy	

Source: This is reproduced in 'Ferranti Computers Installed' (Ferranti CS List 286 A, Jan. 1962) and in B.B. Swann, 'The Ferranti Computer Department', unpublished typescript, 1975, in the National Archive for the History of Computing, Manchester University. The details have been checked, where possible, in various surveys, such as *The British Commercial Computer Digest* (Computer Consultants Ltd., 1962).

Industry Structure as a Competitive Advantage: The History of Japan's Post-war Steel Industry

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The rapid growth of the Japanese economy in the post-World War II decades revived a controversial debate concerning the role of the state in economic development.[1] On one extreme are those who attribute much of the growth of the Japanese economy to its developmental state.[2] According to these researchers, the Japanese government, through institutions such as the Ministry of International Trade and Industry (MITI), adopted sectoral policies that supported and developed particular industries for trade. On the other extreme are those who argue that Japan's success resulted largely from the natural response of industrialists to market incentives.[3] These researchers assert that competition in a growing domestic market challenged managers to innovate and increase productivity, thereby fueling steady industrial growth. Implicit in this perspective is the assertion that government policies were, at best, inconsequential.

To advance our understanding of the role of the state in economic development, it is useful to isolate and examine specific sectoral policies. This article contributes to the debate by examining the role of the Japanese government in the development of one industry, steel. The steel industry provides a vivid example through which to analyse Japan's sectoral intervention. Government policies targeting steel for growth began as early as 1947 and continued through the high-growth decades of the 1950s and 1960s. The policies ranged from protectionism, via tariffs and import restrictions, to preferential financing and coordinated capacity expansion. Then too, steel was one of Japan's earliest and possibly most dramatic industrial successes and, as such, became the archetype of Japan's post-war economic success.[4] The industry was rebuilt in the early 1950s, and, by 1953, was producing 7.7 million tons of steel, equal to its peak output a decade earlier during World War II. For the next two decades, Japan's steel output grew at an average annual rate of 15 per cent. By 1976, the industry was capable of producing nearly 150 million tons of steel yearly and was responsible for 16 per cent of the world's steel market share. Even in the mid-1980s, by which time Japan had lost its superiority in steel to Korean companies, Japan produced over 20 per cent of the world's total steel exports.[5]

Of course, simply observing that, on one hand, the Japanese government adopted policies targeted at steel and, on the other hand, that the industry grew rapidly and achieved the government's desired objective, proves little about the effectiveness of state intervention.[6] Consequently, this study goes beyond these observations and isolates and analyses the effect of Japan's industrial policies in steel.[7] It examines how the government intervened, for what purposes, and the actual behaviour of firms in the industry.

The central question of this article is: did Japan's government policies in steel help, hinder, or leave unchanged the industry's development? My main argument is that Japan's policies in steel helped the industry develop a competitive advantage by shaping the industry's structure. Through sectoral-specific policies, the Japanese government intervened in the market to organise the factors of production in steel. MITI understood the economics of capital-intensive industries and used its power to ensure that the industry's resources were employed efficiently. In the early post-war years, the government, through MITI, constrained supply and channelled resources into a few large manufacturing units, enabling steel firms to realise the economies of scale fundamental to efficient steel manufacturing. Later, the government allowed the steel industry to manage and co-ordinate its capacity expansion decisions. In this way, the Japanese government influenced the structure of the Japanese steel industry and helped it develop a manufacturing cost advantage. While the government's policies alone were not sufficient to guarantee the industry's success, they contributed to it by accelerating the formation of Japan's steel oligopoly.

I

The Economics of Steelmaking

To understand the evolution of Japan's post-war steel industry, one must first understand the fundamental economics of steelmaking. This study is concerned with the basic carbon steel industry which, through the 1970s, accounted for over 85 per cent of all steel produced.[8] Basic carbon steel is made into products which are sold to producers of capital and consumer goods either as finished products – plates, bars, shapes, wire and pipe

– or as semifinished products – blooms, billets and slabs. The industry manufactures hot-rolled sheets for automobile and household appliance makers, beams used in bridgework and construction, and plates used in shipbuilding. Carbon steel is a commodity: its products have to meet general physical and chemical tests after which all companies' products are virtually identical. Unlike specialty or alloy steels which have to meet a host of other product requirements, basic carbon steel has almost no brand differentiation. Consequently, price and, to a lesser extent, service are the key factors in determining sales. Thus, competition in the world steel market depends on price which depends largely on costs.

The steel manufacturing process is generally composed of three discrete steps: the blast furnace, in which raw materials are heated and reduced to liquid pig iron; the steel furnace in which pig iron is oxidised and converted to raw steel; and the rolling process in which the raw steel is moulded and rolled into finished or semifinished products. From the late nineteenth century, efficient steel production required that companies engage in all three stages of this process.[9] By integrating backwards into iron production and forward into rolling, steelmakers could assure themselves an adequate and steady supply of affordable inputs and a continuous flow of materials through their plants.

The most salient fact about steel manufacturing is its extreme capital intensity.[10] Every stage of the steelmaking process requires companies to commit huge amounts of capital exclusively to the manufacturing of steel. Moreover, unlike labour-intensive industries in which an increase in output requires a corresponding increase in labour, capital-intensive industries enable producers to increase output with a one-time investment in capital. Capital intensity, which obviously translates into a large fixed cost component, provides producers with the opportunity to achieve greater economies of scale. Because of the large fixed costs, as the volume of materials being processed increases the cost per unit drops quickly.

In the 1950s, the minimum efficient scale – the scale of operation necessary to reach the lowest cost per unit – for an integrated steel plant was estimated to be approximately 1–2.5 million tons of steel capacity.[11] Technological improvements during the 1960s and 1970s increased the minimum efficient scale of blast furnaces and rolling mills and, in turn, of entire steel plants. The optimal capacity of a blast furnace increased from 300,000 tons of pig iron a year in 1950, to over 3 million tons by the 1970s. By then, a modern hot strip mill, which is used to roll slabs into sheets, could produce 3–4 million tons a year when used continually. Given the minimum efficient scale of blast furnaces and the logistical problems of balancing the output of blast furnaces, basic oxygen furnaces, rolling mills, and finishing mills, the efficient scale of a steel plant was upwards of 6–7 million tons of crude steel by the 1970s. If built in the United States, a new steel plant of this size would have cost more than three billion dollars.[12]

To minimise the unit fixed cost, however, a steel plant has to operate at or near full capacity; operating below capacity wreaks havoc on unit costs. Consequently, a steel plant's overall efficiency depends on it operating 'full and steady', around the clock, throughout the year.[13] Thus, the capital intensity of steel manufacturing dictates that plant size and capacity utilisation are primary cost determinants.

Additionally, although the basic chemical process for manufacturing steel barely changed during the twentieth century, several technological innovations improved manufacturing efficiencies and reduced the time, labour, and raw materials required to produce a ton of steel. The primary technological breakthrough was in the steelmaking furnace. Starting in the late 1950s, the basic oxygen furnace replaced the open hearth furnace as the most efficient method of oxidising pig iron to produce raw steel. Continuous casting technology, developed in the 1960s, eliminated several steps in the manufacturing process, thereby minimising steel waste and reducing energy consumption and labour usage. Computer controlled technology also yielded significant costs savings and further accelerated the upward trend in the size of steel plants and equipments.

II

The Industry's History: Pre-1950

Japan's modern iron and steel industry started in 1897 when the government built the integrated Yawata Iron Works. By 1920, the industry boasted more than 100 private steel mills, yet the industry remained small, fragmented and struggling. In 1929, Japan produced only 2.3 million tons of steel or two per cent of the world's total.[14]

When Japan invaded Manchuria in 1931, the government feared that the country's weak steel industry could not meet Japan's military demand. From then until the end of the Pacific War in 1945, Japan's steel industry was co-ordinated by the Japanese government. In Japan's 14 years of war, the Ministry of Commerce and Industry (which became the Munitions Ministry from 1943–45) planned steel capacity, production, raw material procurement, distribution and prices. National resources were poured into heavy industries, more than doubling capacity in steel, aluminum, and machine tools between 1937 and 1944. Steel output rose from 2.4 million tons in 1932 to nearly 7 million tons in 1939 and, finally, to 7.7 million tons in 1943, the industry's highest level of output up to that point in history.

When Japan's military offensive ended, its economy was in ruins and its industries were barely functioning. With a mere half a million tons of output in 1945, Japan's steel industry had collapsed. Due to a combination of economic and political factors, less than 30 per cent of the iron and steel facilities were in operation. At the war's end, the future of Japan's steel industry was doubtful.[15]

The industry faced four serious problems. First, the Supreme Commander of the Allied Powers (SCAP), charged with demilitarising Japan for the Allies, had prohibited over one-half of Japan's steel mills from operating. In attempting to ensure that Japan could never again wage an aggressive military offensive, the early Occupation policy restricted operations in all munitions industries, in which group it classified steel. The Pauley Plan, a well-known SCAP document named after its author, the US ambassador Edwin W. Pauley, charged Japan with permanently reducing its steel capacity to its pre-war level of 2 million tons.

Second, peace ended the heavy war-related demand for Japanese steel. Crippled by severe shortages of food, energy, raw materials, and foreign exchange, Japan's first priority was to avoid the mass starvation which in 1946 seemed imminent. The country's post-war civilian economy simply could not generate enough activity to replace the military demand for steel.

Third, severe shortages combined with Japan's post-war inflation raised Japan's production costs. The departure of forced Korean and Chinese labourers at the end of the war crippled the nation's coal industry which, in turn, threatened manufacturing industries like steel and increased the country's dependence on imports. Moreover, Japan's chief sources of raw materials – China, Manchuria and Korea – were closed to Japanese trade at the end of the war. With no alternative suppliers in Southeast Asia, Japan turned to Western supplies which, in being further away, were more costly to transport. A shortage of foreign exchange severely limited Japan's ability to import supplies. Manufacturing costs were also affected by Japan's rampant inflation. Soon after the war the Japanese government repaid its huge wartime obligations to the private sector and flooded the unproductive economy with yen. In the first six months after the war, Japan's price levels rose by a factor of ten.

Finally, although at the end of the war Japan had over 40 steel companies, the vast majority of iron and steel facilities were too debilitated to operate. The war had destroyed 20 per cent of the industry's plants and, of the plants and equipment remaining, much was obsolete, debilitated or both. For 14 years, the industry had primarily manufactured shapes for munitions. After the war, the companies needed to shift output from military goods to sheets, strips, and hoops necessary for capital-goods industries. For this, firms needed new rolling mills. Moreover, during the war, the companies' equipment had been used unremittingly and maintained minimally so that even equipment that was not obsolete needed to be repaired or replaced. As Japan's equipment manufacturers were also not operating, new steel equipment would have to be imported from Europe or the United States. This in turn required a supply of foreign exchange that Japan lacked.

These economic factors – low demand, input shortages, domestic inflation, and obsolete facilities – ensured that Japan's steel companies had among the highest manufacturing costs in the world. Despite very low wage rates, Japanese steel costs were 50–100 per cent higher than those of comparable products manufactured in the US, France, and Great Britain.[16] High manufacturing costs, of course, precluded Japanese steelmakers from exporting except for periods of extreme shortages.

III

A Strategy for Steel

By 1948, SCAP, responding to the Cold War, had modified its reparations policy for Japan and instituted a modest recovery programme. To encourage economic development and independence, the SCAP allowed heavy industries like steel to reopen and, in addition, transferred to the Japanese government authority over the allocation of scarce resources and economic policy. Japan already had a tradition of central economic planning from its decade and a half at war. Moreover, since the government had directed Japan's industrial production during mobilisation, the country had agencies and bureaucrats experienced in developing and implementing industrialisation policies. After some reshuffling – during which the Ministry of Commerce and Industry, which supervised war mobilisation, and the Board of Trade, which oversaw exports, imports, and foreign exchange, were abolished and the functions of these two former institutions were combined in one new ministry called the Ministry of International Trade and Industry (MITI) – Japan's post-war developmental state was in place.[17]

In 1950, the objective of the Japanese government was to rebuild the country's devastated economy. One priority, of course, was to earn foreign exchange with which Japan could pay for necessary imports of food, raw materials, technology, and heavy machinery. To earn the foreign exchange, Japan needed a correspondingly large volume of exports, preferably of the high-value-added variety. At the time, textiles – a low-value-added commodity – were Japan's primary exports. Consequently, it was necessary for Japan to change the particular mix of industries that comprised the nation's economy.

MITI targeted several industries for potential export growth. One of these was steel.[18] Considered the 'rice of industry' in Japan, steel had long enjoyed a privileged position in the Japanese economy. In the aftermath of war, the Japanese government renewed its commitment to the steel industry for three reasons. First, steel was perceived to be a potential export commodity because world steel demand was strong and was expected to become even stronger as national economies recovered and converted to peacetime production. Second, because of their high value added, steel exports would contribute more foreign exchange to Japan's national income than other low-value-added commodities such as textiles. Third, as a basic material used in key industries such as shipbuilding, automobiles, and machinery, steel would be essential to Japan's economic development.

For Japan to compete successfully in the world steel market, the industry required a comparative cost advantage. Given the fundamental economics of steelmaking, the industry needed large, modern, integrated facilities that operated at or near their full capacity. The small size of Japan's market dictated that the country could accommodate only a limited number of plants. In 1950, for example, the Japanese steel industry shipped nearly 5 million tons of steel – 4.1 million tons domestically and 0.7 million tons abroad. With the optimal plant size of approximately 2 million tons, an efficient industry – one that fully exploited the economies of scale – could meet this demand with two or three large, modern plants. This ideal industry structure would enable plants to run full and steady thereby minimising production costs by fully exploiting the economies of scale.

Japan's steel industry structure, however, was a far cry from this ideal. In 1950, the country's steel capacity was spread over 44 iron and steel companies: four integrated makers, 15 open hearth furnace makers, and 25 small, highly specialised rolling mill or pig iron companies. Like steel industries in all major steel-producing countries, Japan's was dominated by a few large firms. The six major companies, which were privately owned and operated, produced about 65 per cent of the industry's output. Yet only one integrated plant – the Yawata works – even approached the minimum efficient scale in steelmaking. Japan's remaining five integrated plants possessed far too little capacity to exploit the economies of scale in steel production (see Table 1).

TABLE 1

JAPAN'S INTEGRATED STEEL PLANTS, 1950

Company	Works	Steel Capacity (million tons)
Yawata Steel Co.	Yawata	1.80
Fuji Steel Co.	Mororan	.50
	Kamaishi	.69
	Hirohata	.60
NKK	Kawasaki	.34
	Tsurumi	.34

Source: Annual Reports.

The three largest companies – Yawata, Fuji, and Nippon Kokan Kabushiki (NKK) – were integrated steelmakers and, on average, were twice as large as the next three companies. Yawata and Fuji were established in 1950 when the Occupation forces dissolved the country's largest and only government-owned steel firm, the Japan Iron & Steel Co. Yawata Steel, Japan's largest steel maker, operated two plants, Yawata and Tobata, in Japan's southwest Kyushu area. Of these two plants, only Yawata was integrated. With 1.8 million tons of capacity, Yawata was the largest steel plant in Japan. The Fuji Steel Co. operated three integrated plants – Hirohata, Kamaishi and Muroran – each of which had fewer than one million tons of steel capacity. Japan's third integrated producer, NKK, operated the integrated Tsurumi and Kawasaki works. NKK's two integrated plants, which were both situated in the Yokohama area near Tokyo, each possessed a mere 0.34 million tons of steel capacity.[19]

The next three companies in order of market share were Kawasaki Steel, Sumitomo Metal Industries and Kobe Steel Works. Each had at one time planned to build blast furnaces and integrate backwards into pig iron production but all had been forced to postpone these investments during Japan's decade and a half at war. Consequently, Kawasaki Steel, Sumitomo Metal and Kobe Steel were 'open hearth furnace makers'; they bought pig iron, converted it into molten steel in steel furnaces, and then moulded and shaped the steel into products.

Formerly the Steelmaking Division of the huge Kawasaki Heavy Industries Co. Ltd., Kawasaki Steel became an independent legal entity in 1950 after the Occupation authorities ordered the dissolution of Kawasaki Heavy Industries.[20] Kawasaki Steel inherited seven small, non-integrated plants which together manufactured a wide variety of products including sheets, plates, tubes, and wire ropes. Sumitomo Metal Industries was also formed when the Occupation Authorities dissolved the *zaibatsu* and other large industrial groups. Separated from the Sumitomo group, one of the most powerful combines in pre-war Japan, Sumitomo Metal operated three small, non-integrated works: a new plant in Wakayama, in south-eastern Japan; a castings and forgings plant in Osaka; and a tube mill in Amagasaki, across the river from Osaka. Finally, Kobe Steel, which became a private steelmaker in 1911, possessed several small, specialised plants, none of which was integrated at the end of World War II.

Thus, in 1950, when the Japanese government targeted steel as a potential export product, Japan's steel facilities were not competitive in the world market. While the vast majority of steel capacity in America and Europe was in integrated plants of more than one million tons, over 75 per cent of Japan's capacity was in plants far smaller than the minimum efficient scale in steelmaking. Moreover, every integrated plant, except Hirohata (of Fuji Steel), had been constructed before 1920 and operated old, worn-out equipment. Yawata, Japan's largest plant, was built in 1897 and consisted of 12 small blast furnaces – eight of which were in such disrepair that they were not functioning – and 29 small open-hearth furnaces. The layout and transportation systems through the Yawata works was also intricate and technologically obsolete.

Bureaucrats at MITI recognised that to win global market share, the steel industry had to be transformed from this fragmented agglomeration of small-scale plants into an oligopoly with large, modern facilities. This fact brought the Japanese government face-to-face with perhaps the central dilemma of industrial policy: was government intervention necessary – or even desirable – to effectively organise an industry's resources? If left to the invisible hand of the market, would resources be drawn to steel? Would too many or not enough factors of production enter the industry? More to the point, if left to market forces, would the factors of production be organised in the most productively efficient structure?[21] Conversely, could government policies facilitate a superior industrial organisation?

The Japanese government approached these questions with assumptions that differed from those that prevailed in the west. To begin with, most Japanese policymakers had never subscribed to Adam Smith's notion that the market was the optimal way to achieve economic objectives. Influenced by the German school of economics, especially the ideas of neo-mercantilism, Japanese policymakers assumed that the government had a vital role to play in fostering industrial development.[22] Moreover, the government had experimented with questions like these as far back as the Meiji Restoration, and in the 1920s and 1930s, when Japan had faced economic problems comparable in kind and severity to those of the 1950s. While these experiments resulted in only mixed success, the prevailing ideology in the post-war bureaucracy assumed that government leadership was needed to guide private sector economic activity.

To determine how the government could intervene, MITI bureaucrats turned to the economics of steel manufacturing. The government, through MITI, intended to build a sustainable cost advantage to ensure that steel companies were competitive in the global market. Thus, the over-riding principle guiding MITI's policies was that to succeed internationally, the industry had to minimise its manufacturing costs. To do this the industry required large scale plants, high throughput, and modern technology. MITI reasoned that industrial policies could facilitate the development of these structural characteristics.

Consequently, the primary objective of MITI's policies in steel was to co-ordinate the factors of production in a way that enabled producers to fully exploit the economies of scale in steelmaking. The first structural requirement then was that the industry maximise the number of units produced – or throughput – at each plant. To ensure that plants operated full and steady around the clock, required that capacity – or supply – remain relatively balanced with (domestic and export) demand. Therefore, throughout the post-war decades, MITI's policies were aimed at creating an equilibrium between supply and demand.[23]

Second, since large steel plants are more economical than small, MITI's second guiding principle was that each plant be as large as the minimum efficient scale in steelmaking. Conversely, the maximum number of plants the industry could accommodate was determined by the size of the market. The optimal number of plants was equal to the quotient of estimated total demand divided by the minimum efficient scale in the industry. Third, to ensure that companies maintained modern technology and efficient methods of production, MITI intended to preserve interfirm rivalry.

To manage these structural requirements, MITI controlled capacity and entry. MITI ensured that Japanese steel was manufactured in large-scale facilities that exploited the economies of scale in steelmaking by controlling the supply of steel in Japan's market. By limiting the amount of total steel capacity and the number of plants in the market, MITI restrained the Japanese steel industry. This restraint ensured that steel would be manufactured in large plants with high capacity utilisation. Other short-term policies, such as price and production cartels, were used to help companies through periods of temporary market instability. But the government's overwhelming policy choice was to intervene systematically in the market to constrain the industry's structure. By limiting the resources invested in new steel capacity and concentrating those in the hands of a few large companies, the government concentrated volume in a few plants and accelerated the development of a steel oligopoly.

The striking aspect of these industrial policies was not the economics of steelmaking, for these were not unique to Japan, but that the objective of Japan's public policy intervention was to exploit the economics of capital-intensive industries to develop a world-class steel industry. MITI understood the essential requirements of capital-intensive industries and used its policies to co-ordinate the industry's resources in a way that facilitated a competitive industry structure. Because these policies furthered MITI's objective – developing steel into a successful export industry – these policies were perceived to be an improvement on the competitive market outcome. As in the decision to regulate in all market systems, the government's intention was never to break completely with the market but rather to improve on what it perceived as an inevitable market failure.

IV

Capacity Limits Through Protectionism

The first, and easiest, way for the Japanese government to limit steel capacity was to close the domestic market to steel imports. From the beginning of the Occupation until the mid-1960s, foreign steelmakers were generally prohibited from selling in Japan. Protectionism gave the industry the time, volume, and experience to rebuild its manufacturing competence. When the Korean War broke out in June 1950, the prosperous world economy was already suffering from a steel shortage. As a result, demand for Japanese steel was boosted by 45 per cent in 1950 and 28 per cent in 1951. By 1953, the steel industry had recovered from its war-time damage. With national income growing at more than 10 per cent a year, domestic steel demand revived and matched its prior wartime peak. According to developmental economics, continued protectionism at this time would have had a deleterious long-run effect on steel firms by reducing their exposure to international competition.[24]

But Japan maintained import barriers in steel until the mid-1960s because they yielded more than the benefits of time and experience. Rather, the fundamental advantage of protectionism was that it limited the supply of steel in the market and thereby maximised the throughput of domestic plants. As companies used their capacity more fully, unit costs were reduced, enabling Japanese producers to begin exporting steel. Protectionism guaranteed that the supply of steel in Japan's domestic market would be limited to what domestic producers collectively produced. Japanese steel producers were thus assured a larger volume and therefore lower unit costs than if there had been free market entry. A critical fact seldom realised is that Japan's trade barriers were a strategic tool for limiting capacity and enabling firms to maintain close to maximum throughput.

Japan's use of protectionism as a means of balancing supply and demand is further indicated by the government's policies during domestic steel shortages. On two occasions when Japan found itself suffering from a severe steel shortage, the country temporarily suspended its prohibitions on steel imports. Faced with a domestic shortage and rising prices in 1953 and 1956–57, MITI first allocated foreign exchange to steel users, thereby enabling them to import foreign-produced iron and steel. As demand continued to grow, however, MITI opened Japan's market further by suspending all steel tariffs. Foreign steel streamed into Japan, accounting for 12 per cent of consumption in 1957, a level that imports never again attained.

MITI's decision to suspend Japan's protectionist policies in the face of domestic shortages makes it vividly clear that the government's overriding objective was to balance supply with demand in order to build a globally competitive steel industry. If the government's objective had been exclusively to protect or develop the domestic steel industry, it might have allowed the shortage and resulting high prices to prevail as both an incentive and a method of financing more capital investment. If, instead, the government had been following an import substitution strategy, it would have simply prohibited exports. But, as reflected in Table 3, when Japan's trade restrictions in steel were relaxed in 1957, Japan's companies exported 1.3 million tons of steel while domestic buyers simultaneously imported 1.6 million tons. Japan's policy of allowing foreign steel to enter the market during periods of domestic shortages was logical because the overarching objective of Japan's trade policy was to equilibrate supply and demand to assure effective capacity utilisation.

V

Capacity Limits Through Government Fiat: 1951–60

Though protectionism was necessary, it was not sufficient to ensure that Japanese steel was manufactured in large modern plants with high capacity utilisation. According to MITI, the industry faced two potential problems. First, as more resources were drawn to steel, supply could outstrip demand, forcing the industry to suffer from overcapacity. The industry could then fall into a cycle of low capacity utilisation, low margins, and large losses. By 1951, Japan's environment had changed propitiously for steel. By targeting steel as a priority, the government had publicly renewed its commitment to the industry and drawn resources to it. While the government offered no guarantees and only modest financial assistance, through targeting it had announced that steel was a cornerstone of national economic development and, given steel's strategic importance, the government would try to ensure its survival. Not surprisingly, in 1950, many of Japan's top university graduates entered the steel industry. In this propitious environment, MITI feared a stampede of entry and bold strategies of investment.

Second, MITI feared that, if left to market forces, new steel capacity could be spread over the industry's many small-scale plants. Yawata, Fuji and NKK – the three largest producers – intended to add capacity to their existing works. In addition, Kawasaki Steel, Sumitomo Metal and Kobe Steel were likely to revive their plans to integrate backwards into pig iron production and become integrated producers. MITI feared that new capacity would be spread over an excessive number of plants, and Japanese steel would continue to be produced in uneconomically small plants. Alternatively, if too many companies invested in plants of minimum efficient scale, the plants would be unable to utilise fully their capacity given the small size of Japan's market. In either case – the proliferation of small-scale plants or sheer overcapacity – market forces would yield an industry structure that prohibited efficient steel manufacturing.

To avoid these conditions – which the government deemed 'excessive competition' – MITI intervened.[25] Through a series of *ad hoc* measures that were eventually transferred to the industry, the government limited the amount of new steel capacity built in Japan. With the industry's assistance, the government also co-ordinated which firms built new capacity. The government managed the industry's structure by regulating the quantity of capacity that entered the market and which companies were allowed to build. This ensured that supply remained balanced with estimated demand and that capacity was concentrated in a few large plants that could begin to exploit the economies of scale.

In general, MITI had little legal authority and few sanctions through which to control private sector capacity decisions. During the early 1950s, however, MITI had a commanding influence because of its control over scarce resources. The government agency had full authority over the allocation of Japan's foreign exchange and, through that, came to control imports and all joint venture licences. Additionally, either explicitly or implicitly through relationships, MITI had the ability to approve credit or authorise the expenditures of the Japan Development Bank, the Electric Power Development Co., the Export-Import Bank, the Smaller Business Finance Corporation, the Bank for Commerce & Industrial Co-operatives, the Japan Petroleum Development Corporation and the Productivity Headquarters.[26]

In 1951, when MITI's influence over the industry was strongest, steel companies in need of capital submitted expansion plans to MITI's Heavy Industries Bureau for review. If MITI approved the plan, the company was granted loans from Japanese banks. If MITI found a company's plans inconsistent with its plan for the industry, government officials met with company management to negotiate a mutually acceptable level of investment. Likewise, MITI earmarked foreign exchange for coal, iron ore, scrap steel and technology imports to companies as their plans were approved.

MITI used its influence to concentrate resources in a tiny handful of large steelmakers. Rather than allocate funds to many firms and create what western theory would consider a 'competitive market structure', MITI channelled capital exclusively to Japan's largest companies. From 1951–56, the three largest integrated steelmakers – Yawata, Fuji and NKK – received 58 per cent of the funding with Yawata, Japan's largest steelmaker, individually absorbing more than 25 per cent of the loans. The four largest companies received 72 per cent of the capital targeted for steel, equal to $227 million. The remaining 40 steel companies received 28 per cent of MITI's modernisation funds, an amount approximately equal to what was spent by Yawata Steel alone.[27] (Table 2.)

While it is difficult to prove MITI's intention in promoting concentration, subsequent events suggest that it was a deliberate strategy to organise the factors of production in steel in a way that capitalised on the inherent economic characteristics of steelmaking. Under the espoused objective of 'renovation, not expansion', MITI refused to authorise most new construction and continued to constrain the amount of overall capacity in the industry. No new blast furnaces and only those open hearth furnaces that were absolutely necessary to balance existing iron or rolling mill capacity were approved for construction. The vast majority of funds went toward repairs to existing equipment and replacements for old dysfunctional equipment.[28]

Yawata, Fuji and NKK invested in renovating – or 'rounding-out' – their six integrated plants. No greenfield plants or new blast furnaces were built in these companies.[29] Rather, these steelmakers invested in the conventional technology of the time to improve the equipment and layout of their pre-war plants. Round-outs included repairing 13 blast furnaces, refurbishing all open hearth furnaces and installing 12 new open hearth furnaces to balance the production flow through the plants. In the renovations, however, each company also increased the scale of its plants. Yawata Steel, for example, increased its crude steel capacity from 1.82 million tons to 2.32 million tons, while Fuji Steel increased capacity from 1.6 million tons to 2.1 million tons, and NKK from 0.68 million tons to 0.88 million tons. From 1951 to 1955, Japan's capital was directed primarily at upgrading facilities, increasing the scale, and ensuring a steady, coordinated flow of material through a limited number of integrated steel plants.

TABLE 2

JAPANESE STEEL COMPANY FINANCE, 1951–56

Company	Funds (millions of)	(000$)	% of Total	Market Share % Crude Steel Production
Yawata	28,166	80,474	25	30
Fuji	20,791	59,403	19	18
NKK	15,006	42,874	14	14
Kawasaki	15,658	44,737	14	8
Sumitomo	7,005	20,014	6	4
Kobe	4,380	12,514	4	5
26 Companies	19,623	56,000	18	19
11 Companies	0	0	0	
Total	110,629	316,000	100	100

Source: Compiled from *Japan's Iron and Steel Industry, 1953–54* and annual reports.

The Kawasaki Steel Co., the fourth firm that received government funding, was the exception to this pattern.[30] The company's strategy, and its difficulty in implementing it, illustrates the objectives and limits of MITI's power. Japan's fourth largest company and largest open hearth furnace maker, Kawasaki Steel opposed MITI's capital allocation plan and fought to enter the integrated sector. With pig iron and scrap steel prices high and sources unreliable, Kawasaki Steel applied to MITI for capital to build a new, integrated steelwork in 1951. The proposed new works was eventually to have 4.5 million tons of capacity, a plant scale almost unheard of at the time. MITI, however, had other ideas. Kawasaki's proposal met with vehement opposition from government officials and bankers and MITI refused to authorise funds for the greenfield construction project. There ensued a one and a half year battle between MITI and Kawasaki Steel. The government argued that added capacity was unnecessary at the time and would result in 'excess competition'. Fear of overcapacity became the central issue and, as the Kawasaki Steel question began to attract national attention, steel capacity problems were debated in Japanese newspapers and radio programmes.

In an abrupt reversal of policy, however, MITI approved Kawasaki's proposal in late 1952. Explanations for MITI's action vary. One view contends that MITI yielded because of the persistence of Kawasaki Steel's outstanding entrepreneurial leader, Yataro Nishiyama. Some believe that MITI had essentially lost the battle and, to prevent the incident from undermining the Ministry's power, merely condoned Kawasaki's strategy after the fact. Others claim that MITI approved the proposal because the president of Yawata Steel publicly attested to the technical superiority of the proposed work.[31] Whatever the reason for MITI's reversal, the entire incident illustrates both the government's attempt to regulate capacity and entry and, at the same time, the limits of its power.

By restricting companies' access to capital, MITI constrained the growth of small and medium-sized steel companies. Although the three largest open hearth furnace makers had attempted to build blast furnaces before the war, two of these companies were compelled by lack of funds to wait until the integrated firms modernised before they could integrate backwards into pig iron production. The third company, Kawasaki Steel, expanded, but only in defiance of MITI's industrial policy. Several of Japan's small and medium-sized companies challenged the government's policy, charging MITI with 'attaching undue importance to big makers'.[32] Despite these protests, however, the overwhelming majority of Japanese steel companies came to accept MITI's concept of a rationalised industry structure. Although MITI's strategy constrained the growth of these companies in the short-run, managers of these firms generally accepted that it was in their firms' long-run interest to postpone expansion. The government gambled that the industry's concentrated structure would yield a comparative cost advantage which, in turn, would stimulate demand for more Japanese steel. With additional demand, small and medium-sized makers could eventually expand. In the meantime, Japan's resources were concentrated in a few large, updated plants that fully utilised their capacity.

From 1951 to 1955, Japan's crude steel capacity nearly doubled from almost 5 million tons to 9.4 million tons. Helped by a rapidly growing world steel demand and declining production and shipping costs, Japan's steel exports more than tripled, from 0.7 million tons in 1950 – an amount which was possibly inflated by the Korean War – to over 2.3 million tons in 1955. In all likelihood, steel firms were motivated to expand and modernise facilities by market conditions. Yet, the way in which the industry developed during these years cannot be explained simply by market forces. Rather, through protectionism and capacity controls, the government ensured that Japan's steel was produced in plants with higher throughput than what would have resulted from market forces alone. Although capacity doubled, virtually all the new capacity was concentrated in Japan's six pre-war integrated plants. The seventh integrated plant, Kawasaki Steel's new Chiba works, had a mere 0.50 million tons of capacity by 1955. And each of these six plants was larger than it had been five years earlier. Moreover, as MITI strictly controlled the amount of capacity that entered Japan's market, supply was relatively well balanced against domestic and export demand. In 1955, Japan's steel industry reported 9.42 million tons of capacity and 9.41 million tons of crude steel output.[33] Consequently, the companies operated at or near full capacity.

Although MITI's power to direct company investment decisions declined after the early 1950s, MITI continued to use its power over scarce resources to restrain and co-ordinate companies' growth strategies. To prevent overcapacity in steel, MITI rotated capacity investments among the leading steelmakers, and matched the industry's overall capacity growth with the prevailing business cycles. The government assumed the role of co-ordinator, or 'traffic cop' and replaced the 'confusion' of the market with steady, 'orderly growth'.[34] In the slow growth market of 1954, for example, MITI cancelled all new construction loans and capacity increases in steel. In 1956, when the prosperous world economy combined with Japan's rapidly growing domestic market to cause demand for Japanese steel to exceed supply, MITI asked companies to resubmit expansion plans for government approval. To ensure that Japanese steel companies continued to increase their manufacturing competitiveness rather than simply build new capacity, MITI recommended that companies 'scrap and build' existing outdated capacity. MITI advocated that all old steelmaking equipment be removed and replaced with a small number of modern, state-of-the-art machines.[35] Constrained from building new capacity except during approved rotations, Japanese steel firms adopted scrap-and-build as the basis for competing with each other.

Kawasaki Steel Company, Japan's most aggressive firm in the early 1950s, was conspicuously absent from the expansions of the late 1950s.

Until the end of 1958, Kawasaki added no capacity to Chiba or any other facility. Kawasaki not only missed a market opportunity that was recognised by other companies, Kawasaki deliberately cancelled the second phase of construction at Chiba in a boom market. While at least one Japanese researcher speculates that the government disqualified Kawasaki from the industry's construction programme, Kawasaki's own explanation at least confirms the importance of the business-government capacity plan:

> We plan to build more blast furnaces and open hearth furnaces. . . . All these works the Corporation intends to carry out gradually, keeping pace with the progress of the Government's plan of industrial production.[36]

There is no record of what transpired between the government and Kawasaki or the rest of the industry but Kawasaki's behaviour suggests that it postponed construction plans until other companies had built.

Throughout the 1950s, the Japanese steel industry grew in this stable, orderly manner. By the end of the decade, the country's steel capacity had surged to 22 million tons, nearly four time its level ten years earlier. But instead of the stampede of entry that MITI had feared, the industry had grown primarily through incremental expansions and rationalisations of the existing facilities at a few leading companies. Yawata, Fuji and NKK increased capacity by upgrading the blast furnaces and open hearth furnaces at their existing plants. This strategy required all three companies to scrap some existing furnaces and replace them with larger, more efficient equipment. The two major open hearth furnace makers, Sumitomo Metal and Kobe Steel, integrated backwards into pig iron production by acquiring iron producers and, eventually, by building blast furnaces at their open hearth furnace plants. Although by 1960 plans for five greenfield plants had been announced, no greenfield construction (except for Kawasaki Steel's Chiba) had begun.

VI

Capacity Limits Through Self-Regulation: Post-60

By 1960, MITI's control over company investment decisions was significantly reduced from what it had been ten years earlier. Although MITI could still influence the allocation of some capital through the World Bank and the Export-Import Bank, steel companies could obtain capital from equity markets and banks without the government's endorsement purely on the basis of their potential earning power. Moreover, like managers all over the world, Japanese steel company managers were opposed to relinquishing their autonomy over critical business decisions to the government. Consequently, MITI's role changed from one of direct supervision and control to one of hortatory guidance.

In this second phase of development, steel capacity decisions continued to be coordinated but the industry now managed the process. Encouraged by its success in gaining global market share during the 1950s when MITI strictly controlled capacity expansion and entry, the industry came to share the government's concern regarding the dangers of overcapacity. While, on one hand, domestic companies were in a fierce race for capacity and market share, at the same time, managers were acutely aware that the industry was engaged in a far bigger global contest that depended on each firm maintaining a competitive cost advantage. If the industry could maintain a cost advantage by co-ordinating the factors of production within Japan's domestic market, every Japanese steel company would benefit in the long-run. Thus, the domestic market became a greenhouse in which the essential factors of steel production – throughput and scale – were controlled and adjusted to build a globally competitive industry.[37]

By the early 1960s, a new system for controlling capacity investments emerged in steel. The system was known as *Jishu Chosei* which means voluntary or self-regulation.[38] Under this system, managers of the leading steel companies met monthly at the Japan Iron & Steel Federation to coordinate capacity investment plans. While the government did not require that its officials – from either MITI or Japan's Fair Trade Commission – be present, the industry occasionally invited MITI officials to attend to arbitrate disagreements. Industry representatives also met MITI official regularly to co-ordinate the industry's *Jishu Chosei* agreement with the plans of the Japanese government.

The *Jishu Chosei* system institutionalised MITI's earlier capacity co-ordination. With MITI's help, the leading steel company managers assumed the task of co-ordinating capacity increases to protect firms from overcapacity, low operating rates, and rising unit costs. An important aspect of the *Jishu Chosei* system was establishing the criteria for deciding which companies could build. The industry devised a system that allocated expansion rights according to a combination of market share and technical efficiency or productivity. For a company to win the right to build a new plant or add significant new capacity, it first had to demonstrate that it had the most modern and efficient equipment available. This encouraged companies to scrap and build equipment, actually tearing out or razing functioning facilities and replacing them with more modern technology. Under the *Jishu Chosei* system, steel company executives negotiated capacity expansions on the basis of past market share, proven efficiency of existing capacity, and expected future world demand. The process of allocating national capacity according to productivity drove managers decisively away from the marginal-cost analyses typical of most business planning; instead they entered a frenzied race for the right to construct giant modern facilities.

Of course, while the firms agreed that a common solution was desirable, negotiating an agreement was far from orderly or harmonious. *Jishu Chosei* meetings were intensely heated, described by some participants as 'boxing matches' among the companies.[39] The largest companies, particularly Yawata and Fuji, argued most strongly for cartels and restricted expansion. The smaller firms tended to advocate more free market competition. Nevertheless, the six major firms attended the meetings regularly and generally abided by the industry's agreements.

Persistent negotiations were called for on at least four fronts: between large and small companies; MITI and the companies; steel and other industries; and between MITI and other government agencies. At every turn, each side's particular interest had to be placated and, for every decision, there were winners as well as losers. Moreover, the government and industry were far from omniscient in estimating future global steel demand. Nor was it easy for the industry to decide which firm should build. Finally, as in most cartels, the level of commitment to the industry's agreements varied among participants.

The limits of the self-regulatory system were revealed in 1965 when Sumitomo Metal challenged the industry and MITI in a public dispute over the industry's capacity co-ordination. Intent on expanding despite a recession in the domestic market, Japan's fifth largest steelmaker, Sumitomo Metal, refused to abide by the industry's capacity investment limit. Trouble began in 1962–63 when, contrary to the industry's agreement, Sumitomo continued to expand its new Wakayama works in flagrant disregard for the industry's constraint on new capacity. Tension over Sumitomo Metal's rapid expansion mounted throughout the early 1960s until it finally came to a head in the recession of 1965. Sumitomo fought to continue its expansion while the industry argued that the company should abide by the moratorium on new capacity. As the industry tried to strike a bargain agreeable to all, MITI stepped out of its usual role of arbiter and ordered Sumitomo Metal's compliance. MITI's heavy-handed intervention, however, sparked fear of excessive government intervention and, thus, provoked strong opposition from Japanese industry and the press. In the end, the economy improved and Sumitomo Metal was allowed to continue its construction programme.

Although, after 1960, steel capacity was managed collectively by the industry through the informal *Jishu Chosei* system, the government remained influential. But MITI became less the industry's regulator and more just another governing member of the steel oligopoly. Of course, compared to western economies, where capacity co-ordination violated national competition policies, the Japanese government was influential simply by allowing firms to negotiate capacity limits. Then too, throughout the negotiations, MITI tried to persuade the industry of its estimates of future domestic and export demand. MITI repeatedly warned the industry against 'excessive investment', by which it meant investment in redundant capacity.[40] In the early 1960s, MITI formed a 50-person Industry Structure Investigation Council to compare the industrial structure of Japan's leading industries with the structure of industries in leading industrialised nations. The Council analysed the number and size of firms in an industry as well as the prevailing economies of scale, capitalisation, and export ratios in the other countries' industries.

During the 1960s, Japan's steel capacity again quadrupled, surpassing 100 million tons by 1970 (see Table 3). With capacity coordinated by the *Jishu Chosei* system, supply continued to grow in an orderly pattern. Instead of *focusing* their investments on additional tonnage, the leading steelmakers scrapped old facilities and replaced them with new ones to rationalise the industry. For example, from 1950 to 1960, Japanese steel companies, like steel companies everywhere in the world, had invested heavily in open hearth furnace capacity. But during the 1950s, Japanese steel companies aggressively experimented with the new, unproven basic oxygen furnace. As it became clear that the basis oxygen furnace was the superior technology, MITI intervened and compelled the industry to share the oxygen furnace licensing agreement. MITI's intervention both reduced the cost of innovation and dissipated the rivalry in the domestic market. From 1961 to 1966, Japanese steelmakers shut 56 functioning open hearth furances, or 40 per cent of the industry's open hearth furnace capacity.[41] By the late 1970s, every open hearth furnace operating in Japan had been replaced with the more efficient basic oxygen furnace.

Of course, no industry can grow from 5 million tons of capacity to 150 million tons without significant greenfield construction. Indeed, by 1976, nearly two-thirds of Japan's steel capacity was in greenfield plants. But plant construction was constrained and staggered among the six major steelmakers. Only one new plant – the infamous Kawasaki Steel's Chiba works – was built during the 1950s, and this in opposition to MITI's plans. Partly to accommodate the new basic oxygen furnace technology, two new plants – Sakai (Yawata) and Nagoya (Fuji) – were constructed during the early 1960s. Three other new plants – Mizushima (Kawasaki), Fukuyama (NKK), and Kimitsu (Yawata) – were opened between 1965 and 1970. Two more plants – Kashima (Fuji) and Kakogawa (Kobe) – were constructed during the 1970s. By 1975, over 90 per cent of Japan's steelmaking capacity was concentrated in 17 plants.

TABLE 3

JAPAN'S STEEL PRODUCTION, EXPORTS AND IMPORTS
(thousands of metric tons)

	Production	Exports	Imports
1943*	7,650	125	159
1950	4,839	727	3
1953	7,662	1,465	106
1957	12,570	1,261	1,590
1960	22,138	3,144	308
1965	41,161	12,705	32
1970	93,322	23,666	132
1975	102,313	37,927	124

Note: *Peak year of war production.
Source: *Japan's Iron and Steel Industry*, selected years.

The two notorious steel disputes – Kawasaki Steel and Sumitomo Metal – suggest that, like regulation in America, industrial policy in Japan was largely a political art.[42] And, as elsewhere, this constant negotiation yielded imperfect results; on occasion, smaller firms – like Kawasaki Steel and Sumitomo Metal – built capacity despite the government and industry's entreaties to the contrary. Although growth was controlled and equalised among firms, small companies seemed to break the agreements more frequently, and therefore grew more quickly, than large companies. But these inequalities seemed to matter only slightly in the long run since all six firms agreed on the importance of co-ordinating resources in steel. Imperfect as this system undoubtedly was, it enabled the Japanese steel industry to exploit the fundamental economics of steelmaking more fully than any other steel industry in the world at that time.

VII

Industry Performance

From 1950 to 1975, the Japanese steel industry grew by more than 3,000 per cent, yet the industry's structure changed minimally. In 1950, over

65 per cent of Japan's steel was produced by five companies; in 1976, over 82 per cent was produced by the same five companies.[43] More importantly, although annual steel output rose from 5 million tons to nearly 150 million tons, the number of integrated plants barely tripled, rising from six to 17. With this staggering level of growth, it is not surprising that two-thirds of Japan's integrated plants were new. But the unusual way in which this growth occurred, involving a government-co-ordinated system of capacity limits, is critical to a real understanding of the development of the industry. Through MITI, the government helped the industry structure its capacity to ensure that plants would fully exploit the economies of scale in steel manufacturing. As Japanese steelmakers minimised their unit costs of production, demand for Japanese steel surged, increasing the demand for additional capacity in Japan's market.

TABLE 4

CRUDE STEEL CAPACITY: TEN LARGEST STEEL PLANTS IN JAPAN AND THE UNITED STATES, 1977–78
(millions of metric tons)

Japan		United States	
Fukuyama (NKK)	16.0	Indiana (Inland)	7.7
Mizushima (Kawasaki)	12.0	Gary, IN (USS)	7.2
Chiba (Kawasaki)	8.5	Sparrows Pt, MD (Bethlehem)	6.3
Kimitsu (Nippon Steel)	10.0	Great Lakes, MI (National)	5.9
Wakayama (Sumitomo)	9.0	E. Chicago, IN (Youngstown)	5.0
Kashima (Sumitomo)	7.5	Burns Harbor, IN (Bethlehem)	4.8
Yawata (Nippon Steel)	9.8	S. Chicago, IL (USS)	4.7
Oita (Nippon Steel)	8.0	Fairless, PA (USS)	4.0
Nagoya (Nipon Steel)	7.5	Cleveland, OH (Republic)	4.0
Kakogawa (Kobe)	6.4	Wierton, WV (National)	3.6
Total (10)	94.7		53.2

Source: Japan data from IISS, *Steel Industry in Brief: Japan (1977)*; US data from IISS Commentary: *Steel Plants: USA, 1960–80*.

During the post-war decades, changes in technology increased the minimum efficient scale in steelmaking, prompting Japanese steel managers to expand their plants to an unprecedented size. By the mid-1970s, the average capacity of an integrated Japanese plant was 7.4 million tons; in comparison, the average capacity of an American steel plant was 2.9 million tons – less than half as large. As shown in Table 4, Japan's five largest plants were capable of producing 56 million tons of crude steel while the US's five largest plants could produce only 32 million tons. Japan's largest plant, Fukuyama, was more than twice the size of America's two largest plants. No less than 71 per cent of Japan's entire national capacity was in ten plants, compared to 37 per cent of America's.

Japan's steelmaking equipment also exploited the economies of scale in production. By 1975, 37 of Japan's 69 blast furnaces measured over 2,000 cubic metres. A handful of Japan's furnaces measured in excess of 4,500 cubic metres and could produce over 4 million tons of pig iron a year. In comparison, the US possessed only five furnaces that measured more than 2,000 cubic metres and no blast furnaces in excess of 3,000 cubic metres. European steelmakers fared as poorly with merely 17 furnaces measuring more than 2,000 cubic metres.[44]

Capacity co-ordination enabled Japanese companies to keep overall supply balanced with domestic and export demand. As a result, Japanese companies operated their plants at or relatively near full capacity. Operating rates for the Japanese steel industry as a whole demonstrate the success of this system. (Table 5.) In comparison, US steel firms under-utilised their capacity.[45]

TABLE 5

AVERAGE STEEL CAPACITY UTILISATION: JAPAN AND THE UNITED STATES, 1960–70

Year	Japan (%)	US(%)
1960	88.0	66.8
1961	94.2	65.4
1962	80.3	65.3
1963	82.7	72.4
1964	92.1	83.7
1965	83.5	86.1
1966	84.4	87.4
1967	92.5	82.5
1968	86.3	84.8
1969	91.7	90.8
1970	90.0	84.6

Source: Council on Wage and Price Stability, *Prices and Costs in the American Steel Industry* (Washington, 1977), p.145.

Finally, Japanese steel companies also adopted new technology more rapidly than American or European steel firms. By the mid-1970s, 83 per cent of Japan's crude steel was produced in basic oxygen furnaces compared to 62 per cent of America's and 63 per cent of Europe's. More revealing still, in 1976, no Japanese steel was produced in open hearth furnaces whereas the US still produced nearly one-fifth of its steel in the obsolete open hearth furnace. Likewise, Japan's large integrated steelmakers installed continuous casting machines long before comparable producers in America or Europe. By 1976, 35 per cent of Japan's crude steel was continually cast, compared to only 11 per cent of steel in America and 22 per cent of steel in Europe.[46]

These two factors – the companies' full exploitation of economies of scale and their extremely modern facilities – ensured that Japanese steel producers had a sizable cost advantage. By the mid-1970s, Japanese steelmakers had attained an estimated cost advantage of between $61 and $120 per ton over American and European steel producers. Interindustry cost comparisons are difficult to interpret since they depend on a range of assumptions about operating rates, the cost of capital, and exchange rates. Moreover, some calculations consider only integrated producers while others include minimills and specialty steel companies. Nevertheless, the major comparative studies of the steel industry concur that, during the 1970s, Japanese steel companies were the world's low-cost producers.[47]

Japan's sizable cost advantage in steel manufacturing enabled the industry to secure a significant world market share. By the mid-1970s, Japan was responsible for more than 20 per cent of all world steel exports, making it the world's leading steel-exporting nation. Japanese firms shipped steel to over 20 countries, with the largest shipment, by far, going to the United States. Faced with competition from Japan's low-cost producers, the American and European steel industries' production fell from 50 per cent and 25 per cent of the world total in 1950, to 17 per cent and 20 per cent in 1976. If one included indirect exports – that is, Japanese steel purchased domestically for use in export products, such as autos and machinery – Japan's share of the export market was even larger. In less than two decades, the Japanese steel industry was transformed from one that required import protection just to secure domestic market share, into Japan's leading export industry.

Of course, as any student of political economy knows, economic outcomes seldom result from single factors alone, governmental or otherwise. Japan's steel industry was, undoubtedly, also influenced by Japan's situational imperatives and coherent national strategy. Other factors, too – such as low wage rates, an explosively growing GNP, and a possibly favourable exchange rate – also contributed to the development of Japan's steel industry. Japan's trading companies, the *sogo shosha*, facilitated the industry's growth by procuring raw material from overseas and distributing the finished steel products to the domestic and export markets. Likewise, an intense spirit of rivalry always prevailed among Japanese steel firms.[48] But these factors, which are not unique to Japan, do not fully account for the industry's low-cost position.

The argument of this article is that the Japanese government's industrial policies helped the steel industry develop its unique competitive advantage: large-scale plants, full exploitation of economies of scale and modern facilities. The industry's low-cost position did not result from market forces alone. Rather, by constraining capacity expansion and channelling new capacity into a small number of existing facilities, MITI enabled the industry to exploit more fully the economics of steel manufacturing. These fundamental structural characteristics yielded a unique competitive advantage. In later years, as MITI's power was reduced, it relied on hortatory guidance to encourage steel firms to coordinate their capacity expansion decisions. As a result, Japan's steel capacity was concentrated in fewer, larger plants, and was used more thoroughly, and therefore more economically, than any in the world.

In its endorsement of co-operative, non-arm's-length transactions, Japan's capacity co-ordination may challenge some of the fundamental tenets of western economic theory. But in doing so, it also raises difficult questions about the equity, equality, and social welfare of Japan's system. Although much has been written about the costs and benefits of intervening in the market's allocation of resources, there is no general agreement on this subject. Some observers have pointed out that the Japanese steel industry appears to have performed worse financially than the US steel industry.[49] Yet the highly leveraged financial structure of Japanese companies may change the relevant measure of profitability. Likewise, in Japan's economic system it may be entirely spurious to assess rates of return in steel independent of the rest of the economy. Steel was developed partly as a building block to national industrial development. The relevant social welfare benefit – or loss – then may not be in steel *per se* but in Japan's overall economy. The system in steel which, on first glance, may appear inefficient or inequitable, may have provided higher indirect returns in final goods industries such as automobiles, ships and machine tools.[50]

Then too, because Japan's capital controls limited investment alternatives, steel managers may have invested in some projects with lower rates of return than what was justifiable by global market rates. Nevertheless, while the return to individual projects may have been less than optimal, to the country as a whole the returns appear to have been very high. The implication, of course, is that the burden of these investments was borne by Japanese consumers who, through Japan's tax and social security systems, were motivated to save more and consume less than westerners. But the wisdom of this tradeoff between consumption and investment is far from settled, for Japan as well as the rest of the world.

These considerations serve as a reminder that the Japanese system was, above all, a national strategy. Thus, the question of social welfare gain is not intrinsic to steel or to any one of Japan's other global industries. Whether or not Japan's economic strategy was optimal, the central fact remains that the Japanese government achieved its objective of building a globally competitive steel industry by intervening in the market and shaping the industry's structure to enable firms to fully exploit the economies of scale in steelmaking.

VIII

Conclusion

This article examines the effect of Japan's industrial policies on the evolution of the steel industry. It argues that the government and industry together deliberately organised the industry's resources to yield a competitive advantage in the world market. Through government and industry-wide coordination of capacity, the Japanese steel industry was structured fully to exploit the economies of scale in steel manufacturing.

The history of the Japanese steel industry suggests two important lessons. First, industry structure can yield a competitive advantage. Japan's low-cost position in steel resulted, in part, from its uniquely large-scale plants and full exploitation of economies of scale. While other factors were also necessary, the industry's deliberate management of its structure allowed it to exploit the fundamental economics of capital-intensive industries which contributed towards its competitive cost position. Second, the Japanese government assisted the industry in developing this unique competitive advantage. In the Japanese steel industry's early post-war history, the government, through MITI, directly facilitated the industry's full utilisation of its capacity by co-ordinating capacity investment decisions and concentrating capital in a few large steelmakers. In later years, the industry itself regulated capacity expansion to ensure that its factors of production were used efficiently.

No overall government policies compelled Japanese steel companies' strategies. But the investment decisions that transformed Japan's small, backward steel industry into the strongest in the world were made in an economic environment in which firms were sheltered from the inherent risks attending the huge investments typical of the steel industry. MITI intervened with deliberate policies that were grounded in the fundamental economics of capital-intensive industries. These policies aimed at ensuring that, from the start, the industry was an oligopoly with high, stable throughput, and competitive costs. This suggests that by concentrating capacity in a few large plants and constraining redundant capacity, the Japanese government, operating through MITI, facilitated the emergence of a globally competitive Japanese steel oligopoly.

These lessons raise profound challenges for companies in global industries. Can companies from conventional market environments - those that, for example, allow free and easy entry - compete with firms from markets that allow them to manage and shape their industry structures? If history is any guide, MITI may help other Japanese industries exploit structural opportunities. Other industries could circumvent market forces and accelerate the development of efficient industry structures, ones that yield a competitive advantage in the global market.

Of course, the Japanese government has not always succeeded. In some industries, such as energy, MITI's policies seem to have produced results that were less efficient and effective than what the market would have yielded.[51] Other industries, such as automobiles, declined MITI's structural assistance and succeeded anyway. In addition, in many industries, the underlying economics or optimal industry structure may be more ambiguous than in steel, for which the logic of economies of scale were formidable. Nevertheless, the steel industry's history makes clear that the Japanese government is willing to experiment with new and, as yet, untried methods of industrial organisation. These experiments, which appear to have succeeded more often than they failed, challenge companies, industries and, most of all, governments in foreign markets to change their established ways of doing business.

NOTES

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1. There is a vast literature on Japan's economic miracle including; W.W. Lockwood (ed.), *The State and Economic Enterprise in Japan: Essays in the Political Economy of Growth* (Princeton, NJ, 1965); H. Patrick and H. Rosovsky (eds.), *Asia's New Giant: How the Japanese Economy Works* (Washington, 1976); M. Shinohara, *Industrial Growth, Trade, and Dynamic Patterns in the Japanese Economy* (Tokyo, 1982); K. Yamamura, *Economic Policy in Postwar Japan: Growth versus Economic Democracy* (Berkeley, CA, 1967). For a comprehensive discussion of the industrial policy debate, see D. Friedman, *The Misunderstood Miracle: Industrial Development and Political Change in Japan* (Ithaca, NY, 1988), pp.3–14; C. Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925–75* (Stanford, CA, 1982), pp.6–34; and D.I. Okomoto, *Between MITI and the Market: Japanese Industrial Policy for High Technology* (Stanford, CA, 1989).
2. Examples of this school of thought include: Johnson, *MITI*; E.F. Vogel, *Japan as Number One: Lessons for America* (Cambridge, MA, 1979); and J. Zysman, *Governments, Markets and Growth: Financial Systems and the Politics of Industrial Change* (Ithaca, NY, 1983).

3. R.E. Caves and M. Uekusa, *Industrial Organization in Japan* (Washington, 1976); H Patrick, 'The Future of the Japanese Economy: Output and Labor Productivity', *Journal of Japanese Studies*, Vol.3 (Summer 1977); P. Trezise and Y. Suzuki, 'Politics, Government, and Economic Growth in Japan', in Patrick and Rosovsky (eds.), *Asia's New Giant*.
4. For the view that steel is the archetypical example of the Japanese system, see I. Magaziner and T.M. Hout, *Japanese Industrial Policy* (Berkeley, CA, 1980); I. C. Magaziner and R.B. Reich, *Minding America's Business: The Decline and Rise of the American Economy* (New York, 1982); 'Japanese Government Promotion of the Steel Industry: Three Decades of Industrial Policy', prepared by Verner, Liipfert, Bernard and McPherson, Chartered, for the Bethlehem Steel Corporation and United States Steel Corporation, (Washington, DC, July 1983); and Testimony of Kiyoshi Kawahito before the United States International Trade Commission, No.332–162, 'A Critique of the "Bethlehem Steel Report" on Japanese Government Promotion of the Steel Industry', 16 Aug. 1983.
5. *Japan's Iron and Steel Industry 1987*, p.216.
6. This is a common criticism of research on the role of the state in Japan's economic growth. For a summary, see D. Friedman, *The Misunderstood Miracle*, pp.4–5. There is, however, also a good deal of excellent research that avoids this problem. See, for example, M. Anchordoguy, *Computers Inc.: Japan's Challenge to IBM* (Cambridge, MA, 1989).
7. The study of which this article is one part is P.A. O'Brien, 'Coordinating Market Forces: The Anatomy of Investment Decisions in the Japanese Steel Industry 1945–1975' (unpublished doctoral dissertation, Harvard Graduate School of Business Administration, Boston, MA, 1985).
8. The remaining approximately 15 per cent is stainless and heat-resisting steel, and non-stainless alloy steel.
9. During the 1970s, a new segment of producers emerged, called 'minimills', which operate without blast furnaces. Responsible for about 15 per cent of the American steel market by the mid-1980s, the minimills manufacture primarily light structural rods, bars and shapes, traditionally low-end-of-the-market products. With virtually no investment in raw materials and transportation facilities and with a limited range of products, minimills are unencumbered by high capital costs and, consequently, can operate efficiently with as little as 250,000 tons of capacity per year. Although minimills are responsible for an increasing share of the market, they do not have the technical capability to replace the integrated sector in sheets and other flat-rolled products. D.F. Barnett and R.W. Crandall, *Up From The Ashes: The Rise of the Steel Minimill in the United States* (Washington, 1986), esp. Ch. 6; and J.R. Miller, 'Steel Minimills', *Scientific American*, 250:9 (May 1984), pp.32–9.
10. This discussion of capital intensity and its implications for the economics of steel manufacturing owes a great deal to the theory and concepts of Alfred D. Chandler, Jr. See especially, A.D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA, 1990), pp.21–8; and *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA, 1977), pp.258–69. Economists in the field of industrial organization have also developed extensive literature on the subject. For a brief summary, see F.M. Scherer, 'Economies of Scale and Industrial Concentration', in H.J. Goldschmid *et al.* (eds.), *Industrial Concentration: The New Learning* (Boston, 1974), pp.16–54.
11. S. Bain, *Barriers to New Competition: Their Character and Consequences in Manufacturing Industries* (Cambridge, MA, 1956), p.236.
12. Estimates of the optimal size of a blast furnace are from M.G. Boylan, Jr., *Economic Effects of Scale Increases in the Steel Industry: The Case of US Blast Furnaces* (New York, 1975), esp. p.138; and US Federal Trade Commission, *The United States Steel Industry and Its International Rivals: Trends and Factors Determining International Competitiveness* (Washington, 1978), esp. Ch. 7. Estimates of the minimum efficient scale of steel plants and the cost of construction are from R.W. Crandall, *The*

US Steel Industry in Recurrent Crisis: Policy Options in a Competitive World (Washington, 1981), pp.11 and 76; and H. Mueller and K. Kawahito, *Steel Industry Economics: A Comparative Analysis of Structure, Conduct and Performance* (new York, 1978), p.6.

13. Chandler, *Scale and Scope*, p.128.
14. By comparison, UK steel production in 1929 was 9.79 million tons. US steel production was 57.34 million tons (or 63 million net tons). Unless otherwise indicated, all steel output is in metric tons.
15. E.M. Hadley, 'Industrial Policy for Competitiveness', *Journal of Japanese Trade and Industry* (Sept. 1982), p.48; and E.W. Zimmerman, *World Resources and Industries: A Functional Appraisal of the Availability of Agricultural and Industrial Materials* (New York, revised ed. 1951), pp 685–6.
16. J.B. Cohen, *Japan's Postwar Economy* (Bloomington, IN, 1958), pp.68–9; K. Kawahito, *The Japanese Steel Industry: With an Analysis of the US Import Problem* (New York, 1972), pp.22–3.
17. The authoritative work on the history of MITI is Johnson, *MITI*.
18. The other industries targeted in 1950 were coal, electric power, ship building and chemical fertilisers.
19. The fourth integrated steel company was the Nakayama Steel Works, which accounted for less than 1 per cent of Japan's steel output.
20. There is disagreement over whether, in the end, Kawasaki was reorganised under the SCAP Enterprise Reconstruction Law or voluntarily. See, for example, Institute for Iron and Steel Studies (IISS) and R.L. Deily (ed.), *Steel Industry in Brief: Japan 1977* (New Jersey, 1977), p.54; and S. Yonekura, 'Entrepreneurship and Innovative Behavior of Kawasaki Steel: The Post World War II Period' (Tokyo: Institute of Business Research, Hitotsubashi University, Discussion Paper No.120, 1984), pp.5–15.
21. Japanese bureaucrats were primarily concerned with productive efficiency, not allocative efficiency. See E.M. Hadley, *Antitrust in Japan* (Princeton, NJ, 1970), pp.37–8 and 448.
22. R. Dore, *Flexible Rigidities: Industrial Policy and Structural Adjustment in the Japanese Economy 1970–1980* (Stanford, CA, 1986); Hadley, *Antitrust in Japan*, pp.390–407; C. Johnson, 'The Japanese Political Economy: A Crisis in Theory', *Ethics & International Affairs*, Vol.2 (1988), esp. pp.95–6; and 'Industrial Policy's Generation Gap', *Economic Eye*, Vol.7 No.1 (March 1986), p.22.
23. Official MITI documents frequently revealed this objective. For example, MITI wrote: 'When an excessive number of firms, for a given market size, is reduced by means of mergers and unification, it will lead to economies of scale and the ability to expand into a new technological frontier'. From 'A Proposal by MITI', quoted in K. Yamamura, 'Structure as Behavior', in I. Frank (ed.), *The Japanese Economy in International Perspective* (Baltimore, MD, 1975), p. 65. See also: 'The Positive Adjustment Policy for the Basic Materials Industries', MITI, (24 March, 1983), p.24; and *Economic Survey of Japan 1965–66* (Japan's Economic Stabilisation Board), pp.57 and 62.
24. The benefits of protectionism in infant industries under certain conditions is generally accepted in the development economics literature. For a discussion of the argument, see: H.G. Johnson, 'Optimal Trade Interventions in the Presence of Domestic Distortions', in R.E. Caves *et al.*, *Trade Growth and the Balance of Payments* (Amsterdam, 1965), pp.3–34.
25 The Japanese are prone to describe a variety of market conditions as 'excessive', 'needless' or 'desperate' competition. See, for example: *Economic Survey of Japan 1954–1955*, p.18; Hadley, *Antitrust in Japan*, pp.296–97 and 448; *Japan's Iron and Steel Industry 1953–1954*, p.91; Yamamura, *Economic Policy*, pp.49 and 72–3.
26. Johnson, *MITI*, p.79.
27. *Japan's Iron and Steel Industry 1953–54*, pp 69–72.
28. Ibid., pp.66–78; T. Kawasaki, *Japan's Steel Industry* (Tokyo, 1985), pp 59–80

29. 'Greenfield' refers to an entirely new plant rather than a renovated or 'rounded out' plant.
30. For an account of this incident, see: *Japan's Iron and Steel Industry 1953–54*, pp.72–3; L.H. Lynn, *How Japan Innovates: A Comparison with the US in the Case of Oxygen Steelmaking* (Boulder, CO, 1982), pp.107–10; and Yonekura, 'Entrepreneurship and Innovative Behavior', pp.8–15.
31. *Japan's Iron and Steel Industry 1953–54*, p.72; and Yonekura, 'Entrepreneurship and Innovative Behavior', p.32.
32. *Japan's Iron and Steel Industry 1953–54*, p.73.
33. Ibid., pp.174 and 206. An additional 2 million tons of capacity were reported as out of operation, or under construction or repairs.
34. K. Yamamura, 'Success that Soured', in K. Yamamura (ed.), *Policy and Trade Issues of the Japanese Economy: American and Japanese Perspectives* (Seattle, WA, 1982), p.85; and M. Shinohara, *Industrial Growth, Trade and Dynamic Patterns in the Japanese Economy* (Tokyo, 1982). p.28.
35. *Economic Survey of Japan 1957–58*, p.105.
36. Speculation about Kawasaki in K. Imai, 'Iron and Steel Organization', p.218, in K. Sato, (ed.), *Industry and Business in Japan*, (New York, 1980); and *Japan's Iron and Steel Industry 1957*, p 179.
37. Industrial organisation economists have written extensively about the inclination of oligopolistic firms that recognise their interdependence to co-ordinate investment activities. See: R. Gilbert and M. Lieberman, 'Investment and Coordination in Oligopolistic Industries', *Rand Journal of Economics*, Vol.18 No.1 (Spring 1987), pp.17–33; and G.B. Richardson, *Information and Investment: A Study in the Working of the Competitive Economy* (New York, 1960).
38. K. Imai, 'Japan's Changing Industrial Structure and the United States-Japan Industrial Relations', pp.49–50; E.J. Kaplan, *Government Business Relationship* (Washington, 1972), p.146; and Yamamura, 'Success that Soured', in Yamamura, *Policy and Trade Issues*, p.85.
39. Interview with Mr Takashi Suzuki, Deputy General Manager, Business Research Department, Sumitomo Metal Industries Ltd., 15 Oct. 1984; and Sumitomo Metal Industries, *Annual Report* (1966), p.1.
40. *Japan's Iron and Steel Industry 1957*, p.98.
41. Lynn, *How Japan Innovates*.
42. T.K. McCraw, *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Cambridge, MA, 1984), p.63.
43. From late 1950 until 1969, there was a nominal change in the industry's structure. In 1950, Japan's largest steelmaker, Japan Iron & Steel, was divided into two separate companies: Yawata and Fuji. In 1970, Yawata and Fuji merged – with MITI's endorsement – to form the Nippon Steel Co. which at the time of its formation, accounted for 38 per cent of Japan's steel production.
44. Mueller and Kawahito, *Steel Industry Economics*, p.7; and *Japan's Iron and Steel Industry 1976*, p.63.
45. Because 1960 was the last year in which the American Iron and Steel Institute made public capacity data, capacity utilisation statistics for the US steel industry after 1960 are estimates. It is generally held that US steel capacity was under-utilised. See Crandall, *Steel in Recurrent Crisis*, p.45.
46. Mueller and Kawahito, *Steel Industry Economics*, p.7.
47. For cost comparisons, see: D.F. Barnett, 'International Competitiveness in Steel and Dynamic Advantages', Working Paper, 15 Oct. 1977; C. Bradford, *The Japanese Steel Industry: A Comparison with its United States Counterpart* (1977); Council on Wage and Price Stability (COWPS), *Prices and Costs in the American Steel Industry* (Washington, 1977); Crandall, *Steel in Recurrent Crisis*; Federal Trade Commission, *Staff Report on the United States Steel Industry and Its International Rivals*; and Mueller and Kawahito, *Steel Industry Economics*.
48. T. Nakamura, *The Postwar Japanese Economy: Its Development and Structure*

(Tokyo, 1981), pp.25–6. The role of interfirm competition in Japan's contemporary market is a central theme in M.E. Porter, *The Competitive Advantage of Nations* (New York, 1990).

49. Office of Technology Assessment, Congress of the United States, *Technology and Steel Industry Competitiveness* (Washington, 1980), p.124.

50. An extensive literature is emerging on the subject of profitability and the cost of capital in Japan. See, for example: A. Ando and A. Auerbach, 'The Corporate Cost of Capital in Japan and the United States: A Comparison', in J.B. Shoven (ed.), *Government Policy Towards Industry in the United States and Japan* (Cambridge, MA, 1988), pp.21–49; C.Y. Baldwin, 'The Capital Factor: Competing for Capital in a Global Environment', in M.E. Porter (ed.), *Competition in Global Industries* (Boston, MA, 1986), pp.185–223; W.C. Kester and T. Leuhrman, 'Real Interest Rates and the Cost of Capital: A Comparision of the United States and Japan', *Japan and the World Economy* Vol.1 (1989), pp.279–301; and K. Kawahito, 'Relative Profitability of the US and Japanese Steel Industries', *Columbia Journal of World Business* (Fall 1984), pp.13–17.

51. R.H.K. Vietor, 'Energy Markets and Policy', in T.K. McCraw (ed.), *America versus Japan* (Boston, MA, 1986), esp. pp.226–8.

Serving America's Business? Graduate Business Schools and American Business, 1945–60

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Since 1985, a diverse group of economists, engineers, business leaders, and policymakers have attempted to alert the American people that the nation's competitive edge was rapidly eroding.[1] Echoing Paul Revere, they warned that the US faced multiple dangers: a ballooning budget deficit; a stubborn trade deficit; and the potential loss of comparative advantage in key sectors such as aerospace and computers. These concerned citizens recognized that some decline in the US share of world trade was both positive and inevitable – a testament to the vitality of international competition. But the depth and scope of America's competitive crisis sparked a competitiveness movement, and triggered a search for its causes as well as solutions.[2]

This search focused not only on business and government actions, but also on the institutions and values underlying American economic practices. Some of the blame for America's declining competitiveness has been laid at academia's doorstep.[3] Although there is no direct relationship between business education and managerial success,[4] the role of America's graduate business schools in preparing American management and the relationship between academia and business deserve the careful scrutiny of historians.

America's graduate business schools grew in influence at the same time that American business experienced 25 years of enormous growth, followed by dramatic decline. MBA educated executives were a rarity in American business until the middle of the twentieth century. But during the 15 years following World War II, corporate recruiters increasingly turned to graduates of America's business schools to staff their flourishing operations.[5] These MBA educated managers changed the way Americans did business.[6] Their impressive credentials enabled them to get hired and promoted to management positions in growing numbers.

The post-war generation of MBA-educated executives assumed senior management responsibilities just as their companies began to encounter dramatic changes in markets and technology.[7] Yet many of these executives thought that the days of American economic dominance would never end. Because so many MBA-educated executives had difficulty managing their companies' response to such changes, I have tried to look carefully at how business education has influenced managerial attitudes and practices.

Like other forms of professional education, business education can be evaluated by how well it provided knowledge that is 'useful' to executives at all levels of management.[8] During this 15-year period, graduate business schools differed from other professional schools in *how* they conveyed such 'useful knowledge'. In other professional schools such as law, engineering, education, or medicine, in-class education was supplemented by outside practice in clerkships or internships. Moreover, in these professional schools, such real-world experience was reinforced in classes principally taught by practitioners. But graduate business schools adopted a different approach to educating business professionals.[9] MBA students were rarely instructed by executives and neither they nor their professors brought much business experience to their classroom discussion. Thus, at the same time that American business grew reliant on graduate business schools for their managerial pool, MBA students gained managerial training twice removed from real-world experience.

Professional business education can also be appraised by *how well* it prepared managers to make a wide range of decisions. In *Strategy and Structure*, Alfred D. Chandler noted that the role of managers is to plan and direct the use of corporate resources to meet short-term (operational decisions) and long-term (entrepreneurial decisions) developments in the market. When managers responsible for entrepreneurial decisions concentrate on short-term activities to the exclusion or detriment of long-range planning and co-ordination, they have failed to carry out effectively their role in their enterprise and in the economy. Those executives who fail to develop an entrepreneurial outlook hamper their companies' performance, and over the long-term, survival.[10] If their training was comprehensive, MBA-educated managers should have been able to respond flexibly to short-and long-term market fluctuations, and to make both operational and entrepreneurial decisions. My research indicates that America's graduate business schools generally did train students to make operational decisions. These schools were less successful in helping their graduates develop an entrepreneurial outlook. Hence, the reliance of American business upon graduate business schools may have had consequences for American business and the economy as a whole.

In this paper, two contrasting models of graduate business education are examined to ascertain how well professional business education served American business during the growth period and the more difficult years that followed.[11] The Graduate School of Business at Columbia University (CBS) and the Harvard Business School (HBS) had divergent approaches to business education and were two of the oldest, most prominent schools in the nation.[12] As large well-established business schools, they were major suppliers of MBAs and executive education programmes.[13] In 1956, of approximately 4,500 Masters degrees granted, these two schools produced 888 (almost one fifth of the total).[14] Because both schools were affiliated with prominent research universities, they were expected to produce scholarship and graduates that would add to their university's reputation. The two schools were located in major business cities and, therefore, had great potential to influence management practice at prominent companies headquartered nearby.

During the period of study, both schools established programmes and publications to train and involve business practitioners in their work. Their programmes were emulated by other business schools.[15] The two schools pioneered in developing training for business as a profession, and in balancing liberal and vocational studies within their respective university curricula.[16]

It is important to note that after the mid-1950s, new approaches to management education gained increasing influence on curricular and management practices. Graduate business schools such as Carnegie Mellon, the University of Chicago, and Wharton developed their own distinctive approaches to graduate management education. But because Harvard and Columbia had such a large share of the executive population; because their educational approaches were so influential; and because their publications were so widely read, the two case studies can serve to illuminate graduate business education in the postwar period.[17]

II

The Graduate School of Business at Columbia University

The Graduate School of Business at Columbia University (CBS) was uniquely positioned to serve business needs. Because CBS was located in New York, America's business capital, it had many opportunities to include business practitioners and business problems in its curriculum. Furthermore, the university fostered an environment conducive to research, including business research. However, during the 15 years following World War II, Columbia could not fully capitalise on these advantages.

All of Columbia University's departments and divisions were expected to emulate the university's proud tradition of providing 'liberal education'. Thus, in 1916, the founders of the Graduate School of Business concurred with the university's values: they hoped to use 'liberal educational' subjects and methods to mould competent, socially responsible business citizens. They believed that a liberal education was the best way to provide businessmen with the 'broad knowledge and special competence beyond that which experience alone can provide'. Businessmen must 'have knowledge of science, technology, . . . politics, sociology and related subjects'. Such a liberal educational approach would enable the school to 'improve human competence for the conduct of business and economic affairs'.[18]

'Liberal education' became the avowed strategy of the school. In 1949, undergraduate courses were abolished, and Columbia limited its programme to graduate professional education. In this way, the university reasserted the primacy of undergraduate liberal education. The business school recruited heavily at liberal arts colleges, in the belief that 'the highest standards of business training can hardly be attained unless the fruits of liberal education are preserved'. The school's catalogues advised potential applicants to obtain 'a suitable background in the liberal arts'. Although the majority of the school's students were white males (the traditional pool for corporate staff and line officers), the school also accepted a few women, minorities, and significant numbers of foreign students – all in line with its liberal orientation.[19] Moreover, the American Assembly (which CBS administered) provided a forum for the discussion of society's general problems, a liberal goal.[20]

Ironically, in spite of this 'liberal' emphasis, the school's programme was balanced heavily in favour of job-oriented coursework. Columbia's strategy was in fact job-specific/vocational. It prepared students for specific real world jobs such as personnel manager or accountant, rather than the generic profession of manager.[21] The triumph of vocationalism over liberal education stemmed primarily from the school's long-term devotion to faculty specialisation. Since its inception, CBS had fostered numerous areas of specialisation in business teaching and research. Specialisation enabled the business school faculty to emulate the *mores* of the university and perform in an academically respectable manner. Some of the faculty's specialised areas were attempts to make traditional liberal arts disciplines relevant to business, but most of these specialised areas arose out of the need to train students for real-world jobs. Consequently, many of these areas corresponded to actual jobs or careers, rather than functional business disciplines.[22] For example, courses in advertising included 'Problems in Advertising and Selling', 'Advertising Copy Research', and 'Media and Market Analysis', which prepared students for jobs as advertisers, copywriters, and marketing researchers, respectively.[23] Most CBS students concentrated their coursework in an area of specialisation corresponding to a desired first job.[24]

While there were 'liberal' courses sprinkled throughout the curriculum, the bulk of the school's offerings were in job-specific skills. For example, in 1946, the school offered: courses concerned with business techniques (accounting, statistics); courses dealing with business operations and management (finance, marketing); courses dealing with various specialised types of business (banking, transportation); and miscellaneous specialised courses or seminars on one topic (prices, group behaviour).[25] The curriculum had not changed much by 1957; although the school offered a greater variety of coursework, the bulk of the courses were still vocationally oriented. MBA candidates had to complete 60 points of coursework, by majoring in general administration or devoting their studies to one of the 14 areas of specialisation.[26]

The CBS curriculum had several noteworthy aspects. CBS had long focussed on the social responsibility of business. The school was also an early innovator in the study of international business, and it pioneered in emphasising the philosophical aspects of business.[27] In contrast with many other business schools of the period, Columbia maintained a constant focus on production management and manufacturing throughout this period.[28]

But on balance, CBS's focus was vocational, and during the 1950s the school's leadership became convinced this approach did not enable the school to achieve its goals. Too many students were concentrating their coursework in a single vocational area. There was no common curriculum. Because there was no shared curriculum, there was no common academic preparation for management.[29] Despite the school's adoption of liberal educational values and methods, CBS did not develop effective linkages to the general University community.[30] By the mid-1950s, the school appeared to be unravelling. Nationally-known faculty members departed; faculty morale declined; enrolment stagnated.[31] Clearly, Columbia needed a new approach to business education.

But many on the CBS faculty feared curricular change, and they used specialisation as a rationale for their opposition.[32] Ironically, they argued that any proposed changes to the areas of specialisation would conflict with the school's commitment to 'liberal education'.[33] They maintained that truly 'liberal education' could only be achieved through a 'normal' academic programme, which of course involved their specialties.[34]

As a result of faculty opposition, curricular reform was delayed until 1959. It took five years of prodding from the school's new dean, Courtney Brown.[35] After he inaugurated three faculty retreats to ease the way towards change, the faculty finally accepted an integrated core curriculum which limited the school's fields of specialisation.[36]

But even these curricular reforms did not end faculty specialisation, and as a result, the school was unable to balance its liberal and vocational goals effectively. Despite Dean Brown's leadership, CBS faculty members had enough power to maintain many of their areas of specialisation.[37] Because the faculty simply repackaged its courses as part of the new curriculum, vocationally-oriented education survived at Columbia.[38] After all, the faculty still set teaching standards and priorities. Since faculty appointment committees identified candidates, reviewed appointments, and recommended appointments and promotions, they could effectively sustain specialisation by controlling the faculty. As Dean Brown noted, 'The fourteen divisions were really fourteen little "czars" . . . Each academic division was more or less autonomous'.[39]

Faculty influence over the curriculum and personnel made it difficult for CBS to serve business. Professors determined courses based on their interests, not business needs. Business executives, including the trustees, had no direct input into these courses. Furthermore, many faculty members were unenthusiastic about teaching in the new core areas, such as quantitative methods (computer skills and statistics), which appeared unrelated to their specialities.[40] Although there was good reason to believe these core areas were necessary to keep American business 'on the cutting edge', many CBS faculty members were simply not interested in them.

Faculty control also effected the school's ability to produce research to meet the immediate and long-term needs of business. CBS did not produce either the quality or the diversity of research that its focus on 'liberal educational' values would lead one to expect.[41] CBS faculty members were well-trained and experienced in research, like their peers at Columbia's sister schools. In 1949, 28 of the 52 faculty members had doctorates (52 per cent); this increased to 57 per cent by 1959 (34 of the 60).[42] Yet only one of these doctoral degrees was in business! Thus it was no accident that the CBS faculty shared the academic values of the university's arts and sciences faculties. Like their peers in the university, the business school faculty was prolific: despite the stress of curricular reform, they produced over 100 articles and books during 1953–58.[43] But the business school faculty did not produce pathbreaking research. In the post-war era, many of the major contributions to 'leading-edge' business research were developed by interdisciplinary groups.[44] Despite ample opportunity, the business school faculty did not engage in such collaborative research with professors from the university's other highly regarded divisions and departments.[45] Columbia did not make major theoretical contributions to the study of business.[46] Although Columbia initiated studies on the internationalisation of American business and the role of multinationals in international trade, the school clearly fell short of its research potential.[47] The continued focus on vocational specialities led to research on esoteric issues, all too many of which were irrelevant to the actual problems confronted business executives. During this period, Columbia did not effectively meet the research needs of business.

In part, this reflects the fact that business practitioners had little influence on CBS' approach to education or research. Despite the school's 'unique access to America's greatest business center',[48] executives were seldom on campus. Columbia did not develop courses for business personnel until 1951.[49] The bulk of the university's programmes for executives were held off-campus.[50] Although students could meet business practitioners through the school's lecture programmes, most student contact with executives was at placement or alumni conferences.[51] The faculty had greater opportunities to interact with businessmen. They could open a business, consult, or serve on corporate boards, although none of this service counted towards promotion. There were no formalised incentives for faculty to research and apply the problems of business to the curriculum. This had important implications for what went on in the classroom. Columbia students were prepared for business with academically respectable theories and models; they rarely studied real business problems. In addition, these students learned about business from faculty members who generally had little practical business experience.[52] Their competence to train future business practitioners for the demands of market change appears questionable.

Business involvement in the affairs of the school remained minimal. Business leaders and alumni financed some of the school's research and established scholarships, fellowships and programmes for equipment donations.[53] But the School's Board of Visitors did not review the revised curriculum until 1960, after it had already been enacted.[54] And even this limited business interaction compromised the school's relationship with other divisions of the University. As Dean Brown noted, other departments looked upon the business school as merely a 'milk cow'.[55] This may help explain why the business school faculty bent over backwards to prove its academic legitimacy, in part by remaining committed to specialisation.

Despite these problems, during the 1945–60 period, Columbia Business School effectively met some of the needs of business. Columbia trained its students for many business professions, as well as to make operational decisions. With its skill-oriented coursework, the school served the immediate needs of corporate recruiters and helped students attain their first jobs.

Although the new curriculum helped make Columbia's programme more coherent, faculty power ensured that the school's vocational orientation was maintained. The faculty continued to focus their research on narrow areas of study, most of which were irrelevant to the real-world problems executives were confronting. The school's failure to prepare its students for the challenges presented by the globalisation of technology and industrial capacity in the postwar world may be explained by the faculty's reluctance to engage in path-breaking research. Because CBS maintained so many specialised areas of study, students still learned a skill-specific approach to management. The school did not effectively develop the broader perspective needed by entrepreneurial executives and organisations over a lifetime career.[56] This contrasted dramatically with Harvard's approach to business education during these years.

III

Harvard Business School

Harvard Business School (HBS) was affiliated with America's most prominent university. Yet its independence from Harvard University allowed the school to develop a unique tool for business teaching and research.[57] Like its sister school, the law school, HBS fashioned an integrated strategy for business education and research around the case method.[58] The use of cases for research enabled the faculty to develop relationships with many types of businesses. Furthermore, by using cases, both HBS faculty and students learned from actual business experience. The devotion to faculty-developed cases helped the school maintain a common sense of mission and develop a community among the faculty, students, business and alumni.

The Harvard Business School's approach to business education differed from that at Columbia in two major ways. HBS faculty were not concerned with providing a liberal education in business; they assumed that their students had already been liberally educated in college. Furthermore, HBS did not aim to teach the many professions which comprise business. Harvard trained its students for only one business profession – management. The curriculum emphasized integrated managerial concepts, rather than job or skill-specific concepts. Thus, Harvard trained what Alfred D. Chandler has termed 'good line men', executives who would make the major entrepreneurial decisions for corporate America.[59] Harvard's curriculum focussed on 'the administrator who is not and cannot be a specialist, but who must make use of specialists'.[60] Underlying this training was the notion that Harvard's graduates would become business leaders.[61]

HBS was the most influential graduate school of business in postwar America.[62] This influence stemmed from the quality and size of its classes, its share of MBA educated businessmen, and the breadth of its involvement with business.[63] Harvard dominated the hiring market for MBAs. It had the biggest alumni base in business to draw upon for contacts. By 1949, almost 50 per cent of all MBAs were Harvard graduates.[64] But sheer numbers are an inadequate measure of Harvard's influence. Harvard fostered its reputation by keeping business practitioners involved in the affairs of the school. HBS was able to draw upon the prestige of the Harvard name to develop and enlarge its business contacts. These factors were mutually reinforcing.

The Harvard Business School built its programme around the goal of moulding leaders in business, government, and education.[65] Harvard faculty and administration carefully selected students for their leadership skills and helped them succeed throughout their careers.[66] According to the Admission Statement in the 1954 catalogue, the school looked for men of 'character, intellectual capacity, seriousness of purpose, maturity, leadership potentialities and other favorable personal qualities'. In contrast with Columbia, which aimed to promote a more diversified pool of potential business leaders, Harvard sought students who already possessed the characteristics linked to success in leading American business.[67]

Every aspect of Harvard's approach to business education was designed to prepare its carefully selected group of students for leadership. They learned business from the vantage point of 'top management, where company-wide objectives are set'. Because of this perspective, the graduate, 'regardless of the management level in which he is located will . . . make the most effective contribution to the business as a whole'.[68] Harvard taught its students that they could learn to manage a diversity of skills, tasks, and people in a wide range of employment settings.[69] The underlying message to business was that Harvard's graduates were deemed fit for management and, ultimately, corporate leadership.

The Harvard Business School community worked as a team to help its graduates advance. Alumni throughout the country helped HBS place and track its graduates. The school nurtured an effective long-term relationship with these alumni.[70] Job placement services were always available to facilitate their movement up the career ladder, and HBS constantly surveyed its graduates to assess their success. HBS also utilised its focus on business-oriented cases to market its graduates to business and make business part of the HBS community.[71]

Harvard's curriculum was based on the idea that students could practice for management by learning from real world problems and solutions.[72] Thus, every course at Harvard was taught in the case method; texts and lectures were rarely utilised. The first-year coursework included courses cutting across functional areas ('Administrative Practices', 'Control') and process courses (finance, marketing). The second-year courses included one required course, 'Business Policy'. Students could take a wide variety of electives such as 'Business History', 'Factory Management', 'National Transportation Policy' and 'Problems in Collective Bargaining'.[73] In contrast with Columbia's experience in this period, the HBS curriculum remained relatively stable.

This curriculum had several innovative aspects. Since 1946, HBS had emphasised the role of management in society and business-government interaction.[74] Furthermore, the school was an early leader in stressing the importance of human relations and the different perspectives of individuals within business organisations.[75] Like Columbia, Harvard maintained a focus on manufacturing and production.[76] HBS also pioneered in offering corporate planning as part of the required course on 'Business Policy'.[77]

Despite these curricular innovations, however, the school's rigid adherence to the case method seems to have caused some problems. The faculty was ingrown; and while such insularity can lead to a greater degree of camaraderie, 'curriculum, teaching methods and attitudes towards research can become frozen if considerable new blood is not introduced from the outside'.[78] The devotion to cases necessitated a special type of teacher, one comfortable with the more democratic and applied nature of case discussion (rather than lecturing). As a result, HBS tended to hire Harvard MBA graduates, train them as case researchers, and nurture them through their doctoral studies. Harvard students learned about business from Harvard-educated scholars, rather than from business practitioners. In contrast with the Columbia faculty, the faculty members were scholars of business, rather than traditional academics.[79]

By the mid-1950s, however, this system had produced an inadequate supply of scholars, especially in such new areas of managerial studies as operations research and applied mathematics.[80] HBS had to hire outsiders.[81] These new faculty members had the potential to bring new perspectives to the program. But because they were directed to utilise the case method for their teaching and research, even these lecturers were moulded to fit the Harvard approach to business education.[82]

The reliance on cases limited the faculty's ability to teach business problems. In contrast with Columbia, Harvard faculty members believed that business theory and specific analytical models were subordinate to good managerial judgment.[83] As a result, Harvard's curriculum was more practical[84] and more 'business-oriented' than Columbia's. It effectively taught management and kept professors 'involved with the activities of real corporations'.[85] But, as previously noted, because the bulk of HBS faculty members were homegrown, few had any hands-on business experience. In addition, because cases were the only tool to teach business, the pool of ideas discussed in HBS classes was circumscribed by what had already happened to the corporations examined in Harvard cases. This, I believe, probably blinded many of the HBS faculty to the dramatic changes taking place in the world economy.[86]

The case orientation and HBS's system for evaluating and supporting research seems to have impeded the school's ability to sustain the record of innovative research it had gained after its famous Western Electric studies.[87] In contrast with Columbia, the school's approach to research forced the faculty to develop a unified conception of research on management. Research was centrally assessed and funded by a faculty peer group, which maintained a common conception of proper research. The dominance of Harvard trained faculty made HBS ingrown in its research orientation. The culture encouraged consensus, not intellectual controversy.[88] Furthermore, faculty were encouraged to use case research in order to keep in touch with immediate business problems. This made it harder for the faculty to focus on research projects with a long-term orientation. It also seems to have led faculty to select practical research topics capable of being assessed with case research.[89] As a result, Harvard was not in the vanguard of research-oriented business schools.[90]

The strength of the case method was the *entrée* it provided to the diversity of the business world. Groups of alumni and interested companies were solicited to enable HBS to examine a wide range of companies. Since 1944, the 'Associates' of the school had provided funding for project research and development. Additional funds for research came from companies interested in specific projects or from contributions to a general research fund.[91] HBS acknowledged these contributions in publications, conferences, invitations, and seminars, as well as in cases. These approaches enabled the school to excel in marketing the relevance of its research and in disseminating its research to business.

The case method also furnished businessmen with an effective mechanism for influencing the curriculum. When these businessmen/students participated in case discussions, faculty got immediate feedback from experienced executives. The advanced and middle management classes were held separately from those of the MBA students, but the teachers and coursework were often the same.[92] Faculty service on corporate boards, consulting, and lectures to business groups provided additional indirect mechanisms by which business could influence the affairs of the school.[93] In contrast with Columbia, this interaction between faculty and businessmen meant that in the classroom, students and faculty learned about business with the input, albeit indirect, of business practitioners.[94]

Harvard actively encouraged a dialogue between the school and the business community. Through the school's published cases as well as publications, business could respond to the faculty's research. These publications encouraged feedback from within the business community, by seminar discussions and letters to the editor. They attracted a diverse readership, including executives in small and foreign business, and stimulated discussion on economic, political, technological and social change as well as business problems.[95]

Harvard thus differed markedly from Columbia in its early development of an infrastructure to serve alumni and business. Alumni were kept involved with the affairs of the school through seminars as well as their service in the Associates; the HBS Association (which facilitated the school's relationships with students and alumni) and the school's Visiting Committee.[96] The administration of the school designated staff to maintain channels of communication with business and alumni.[97]

Harvard's reliance on the case method enabled the school to serve many immediate business needs. Students were given a broad conception of management and, as statistics show, went on to lead many of America's companies. Despite this success, it is questionable whether this perspective provided Harvard's graduates with a long-term vision of global economic change.

Although the case method facilitated Harvard's ability to involve business in its programmes, the case method also limited the school's ability to meet many of the long term needs of business. It was difficult for the faculty to use cases to anticipate problems that business had yet to encounter. Furthermore, since research was expected to culminate in cases or case books, the faculty did not focus research on long-term problems.

The business school's limited interaction with other departments at the university made it less up-to-date in those areas where science 'challenged genteel decision-making skill'.[98] Despite its excellent relationship with business, Harvard did not develop a curriculum or research which could prepare executives to anticipate major transitions in world markets or technologies. Consequently, the school provided its students with the confidence, but little of the information and experience, to make entrepreneurial decisions for their future companies.

IV

Graduate Business Education in Service to Business? Conclusion

In this paper, I have developed a two-part standard for appraising business education in the postwar period. Graduate business schools can be evaluated by the approaches they adopted to prepare America's future business leaders. Moreover, each approach to business education can be appraised by *how well* it provided managers with the skills, information and confidence to make both entrepreneurial and operational decisions.

With the Harvard and Columbia wrapping, young men (and at Columbia, women) were made acceptable to corporate recruiters. Companies saved money on their preselection and training costs by hiring students deemed fit for corporate management. But it appears that there were unforeseen costs to American business for its myopic attitudes regarding *how* these MBAs were trained.

Each business school had a special niche: Harvard produced graduates aiming for corporate leadership, while Columbia effectively met the needs of business recruiters for a wide range of specialists. Although the two schools chose different paths to educating executives, both schools effectively prepared their graduates for operational decisions.

These two approaches, however, did not successfully provide managers with the skills and information to make entrepreneurial decisions. Neither Columbia nor Harvard developed a curriculum and teaching methods that kept pace with global economic developments. Moreover, neither school focussed on developing leading-edge business research. The range of ideas discussed in the classrooms of both schools was limited by their respective approaches to education. Harvard students learned only from cases, while Columbia students learned from 'academically respectable' theories and models. These graduates learned an ivory tower, rather than practical conception of business. Without an understanding of the real world of business, they were less prepared to make the entrepreneurial decisions essential to long-term business success.

Columbia and Harvard taught their students how to make decisions in a multitude of environments. But their graduates were not trained to anticipate and flexibly respond to new technologies, production methods, competitors, or markets. Moreover, both schools imbued their graduates with the arrogant notion that if one knows how to manage, one can manage anything and anyone at any time.[99]

American business appeared remote from the schools that supplied them with their future employees. Executives rarely insisted that the MBAs they hired be prepared with actual business experience such as internships. Moreover, although these executives went to business schools as recruiters, guest lecturers and students, they rarely became full-time lecturers or professors. The bulk of faculty involvement with business at both schools was as consultants, not as hands-on managers. Faculty executive exchange programs, as well as student internships, could have helped make business education more relevant to actual business problems and needs.

As noted previously, there is no direct relationship between management education and corporate competitiveness. However, one wonders whether America might have been better off without such reliance upon business education for executive suite preparation. By delegating such training to an outside supplier, many American companies showed a lack of interest in the preparation of a key factor of production – people. In contrast, corporations in other nations such as Germany and Japan, took a more hands-on, in-house approach to training their future leaders.[100]

With greater involvement of business executives in business education, American managers might not have been better educated, since managers may not be effective teachers. With greater investment in the education of their future executives, America's companies may not have been more competitive than they are today. But America's 'whiz kids' may have been better prepared to confront the challenges of unavoidable market change. Meeting such challenges is the essence of entrepreneurial management.

NOTES

1. An earlier version of this article, 'Without Practice or Practitioners: Graduate Business Education, 1945–1960', appears in *Business and Economic History*, 2nd series, Vol.19 (1990), pp.262–70.
2. The competitiveness movement began with the formation of the Presidential Commission on Competitiveness (1985). It was followed by the Council on Competitiveness (1986); the Congressional Competitiveness Caucus (1986); and the Business Roundtable on International Competitiveness (1987). Moreover, numerous

competitiveness courses, a wide range of books on America's competitiveness problems, and legislation mandating a competitiveness impact statement, illustrate the emergence of competitiveness as a new issue for America's policymakers. Michael Porter provides a good sectoral overview of America's competitiveness in *The Competitive Advantage of Nations* (New York, 1990), pp.507–35.

3. Critics who have linked business education to competitiveness include P. Choate and J.K. Linger, *The High-Flex Society* (New York, 1986), and J.N. Behrman and R.I. Levin, 'Are Business Schools Doing Their Job?', *Harvard Business Review*, Vol.62 No.1 (1984). However, no form of education could have prepared students for the specific changes that have bedevilled the American economy since the 1970s.
4. This is discussed in J.S. Livingston, 'Myth of the Well-Educated Manager', *Harvard Business Review*, Vol.49 No.1 (1971).
5. The majority of graduates of graduate business schools receive Masters in Business Administration (MBA) degrees. On the increase in MBAs, see H.J. Muller, J.L. Porter and R H. Rehder, 'Have the Business Schools Let Down U.S. Corporations?' *Management Review* (October 1988), p.24. From 1945–59 the number of graduate business schools increased dramatically, until by 1959 there were approximately 100 schools offering some form of graduate business instruction.
6. MBA training grew in influence as MBA-educated executives gained increased managerial responsibility for many prominent American companies and business magazines touted the MBA. See A.D. Chandler, 'Managerial Enterprise and Competitive Capabilities', pp.11–41 in this volume; idem, 'The Enduring Logic of Industrial Success', *Harvard Business Review*, Vol.68 No.2 (1990), pp 434–44. A 1959 study of 428 top executives in 1950 found that a majority had gone to college. Of the group with graduate degrees, 19 (approximately 4 per cent) had degrees in business administration. M. Newcomer, *The Big Business Executive* (New York, 1955), pp 68–9. The numbers of MBAs increased significantly by 1964. A study of 66 business leaders found 17 per cent had MBAs. F. Bond, D. Leabo and A. Swinyard, *Preparation for Business Leadership* (Ann Arbor, MI, 1965), p.65. A 1979 Harvard study, 'Success of a Strategy', p.3, found that by 1977, over 20 per cent of the top three officers of each of the Fortune 500 manufacturing companies was a graduate of the Harvard Business School. Ten years later, 225 of the chief executive officers at the top 1000 corporations had MBAs. 'A Portrait of the Boss', *Business Week*, Oct. 21 1988, p.28. The bulk of these executives attended business schools during the 1950s.
7. Because of the enormous market share, shrewd management, and technological edge of many American companies, many American managers (along with other executives, economists, and government officials) became arrogant about America's economic prowess. They assumed that the days of American economic dominance would never end Choate and Linger, *The High-Flex Society*, pp.3,91; D. Halberstam, *The Reckoning* (New York, 1986), pp.726–8; and J. J. Servan-Schreiber, *The American Challenge* (New York, 1968), pp.3, 10, 11. A.D. Chandler notes the role of business schools and the press in contributing to this arrogance: 'Managerial Enterprise and Competitive Capability', p.38.
8. I have taken this definition from Robert Locke's new book. R.R. Locke, *Management and Higher Education Since 1940* (Cambridge, 1989), p.212.
9. Unlike engineering schools, graduate business schools found it difficult to integrate professional standards and practices into the business school curriculum. This is because business is not one profession, but many (such as investment banking, accounting, and personnel management). These professions do not share mutually developed professional standards. In further contrast with engineering schools, graduate business schools generally did not develop internship programmes to supplement classroom experience. As a result, academics, rather than executives, held the bulk of influence over business school curricula and research. See

D. F. Noble, *America by Design: Science, Technology and the Rise of Corporate Capitalism* (New York, 1977), pp.168–71, 185.

10. A.D. Chandler Jr., *Strategy and Structure* (Cambridge, MA, 1962), pp.11–16, 383, 396.
11. Although business historians have long looked at the role of managers in the modernisation of the American economy, few historians have examined the training of American managers or business school history. Exceptions include S. Sass, *The Pragmatic Imagination* (Philadelphia, 1982) and J. Cruikshank, *A Delicate Experiment: The Harvard Business School, 1908–1945* (Cambridge, MA, 1987). Robert Locke examined the rise of managerial education in several nations. R. R. Locke, *The End of the Practical Man* (Greenwich, CT, 1984). There are several influential studies of graduate business education during this period, such as R.A. Gordon and J.E. Howell, *Higher Education for Business* (New York, 1959) and F. Pierson, *The Education of American Businessmen* (New York, 1959). See also L. Silk, *The Education of Businessmen* (New York, 1960) and R.D. Calkins, 'Objectives of Business Education', *Harvard Business Review*, Vol.25, No.3 (1947).
12. Harvard Business School, founded in 1908, was the first graduate business school to require a bachelors degree for admittance. Columbia's Graduate School of Business was established in 1916. By 1955, the US had several well-established graduate schools of business (including Dartmouth, Carnegie Mellon, Chicago, Indiana, UCLA, Harvard, Northwestern, Stanford, New York University, Wharton, Michigan and Columbia), affiliated with major research universities.
13. The number of students receiving Masters degrees in business rose from 3,357 in 1948 to 5,204 in 1958. See Pierson, *The Education of American Businessmen*, pp.36–41. Business schools were increasingly viewed as vehicles of social mobility for those seeking to join the growing managerial class. R. Hofstadter and C.D. Hardy, *The Development and Scope of Higher Education in the United States* (New York, 1952), p.90.
14. See Pierson, *The Education of American Businessmen*, p.229 for total Masters degrees. These figures are inexact, because they include MSs as well as MBAs granted. For Harvard MBA enrolment figures see M. Copeland, *And Mark an Era* (Boston, MA, 1958), p.123. For Columbia MS and MBA figures, see Columbia Business School Records (hereafter CBSR), The Report of the Dean, Columbia Graduate School of Business, 1958, p.8.
15. Both institutions were singled out by the Ford Foundation as models for the rest of the nation. S. Schlossman, M. Sedlak and H. Wechsler, *The 'New Look': The Ford Foundation and the Revolution in Business Education* (Los Angeles, CA, 1987), pp.15, 83–94 and Pierson, *The Education of American Businessmen*, p.34. The Ford Foundation reports established criteria for business education. S. Schlossman and M. Sedlak, *The Age of Reform in American Management Education* (Los Angeles, CA, 1988), p.III.
16. America's approach to collegiate and university education was derived from the European tradition of 'liberal learning'. 'Liberal education' traditionally necessitated work in the three major divisions of higher learning (the natural sciences, the social sciences and the humanities) and aimed to teach analytical skills, logic and values. For the purposes of this study, 'liberal education' is defined as broad education based on the lessons of the humanities and social sciences. Vocational or professional training is defined as job or skill-specific training. Hofstadter and Hardy, *The Development and Scope*, pp.137–8 and 208–25. Despite their vocational orientation, graduate business schools were 'hampered by the need to be liberal'. See P. S. Hugstad, *The Business School in the 1980's* (New York, 1983), p.22.
17. The writer cannot generalise about all business schools as she examined only the major approaches to business education in this period. Schlossman, Sedlak and Wechsler; Hugsted; Pierson; and Gordon and Howell all note the influence of Columbia and Harvard on other graduate business school programmes.
18. Announcement of the Graduate School of Business, Columbia University,

1944–1945, pp.10–11, 1948–1949, pp.12–15 and 1949–1950, p.50. These documents were found in the CBSR, stored at the Dean's office. They were kindly made available to me by then-Acting Dean's Kirby Warren and Danelle Crawford, Administrative Assistant and LEAP Co-ordinator at the Dean's office. In 1955, Columbia was singled out by the Brookings Institution to report on how business schools 'liberally educate' their students. Memo to the Committee on Instruction, Item No.199, April 18, 1955. See also Gordon and Howell, *Higher Education for Business*, pp.266 and 255n. On the American Assembly, see T. W. Van Metre, *A History of the Graduate School of Business, Columbia University* (New York, 1954), pp.11, 100, 102.

19. See *Yearbooks of the Columbia University Graduate School of Business*, 1947 and 1960, Unpaginated. Also see C. Brown, *The Dean Meant Business* (New York, 1983), p.155. This was also in line with the schools's 'liberal' orientation.
20. CBSR, Announcement of the Graduate School of Business, Columbia University, 1945–1946, 'Aims of the School', p.11 and Memo to the Committee on Instruction, No.90, 7 Sept. 1951.
21. Throughout much of this period, Columbia's students could prepare for jobs ranging from personnel specialist to traffic manager. See CBSR, Announcement of the Graduate School of Business, Columbia University, 1946–1947, 'Aims of the School', pp.12–13.
22. Some of the functional academic specialisations such as economic geography appeared unique to Columbia. However, the development of functional academic specialties also occurred in other business schools. S. Sass, 'The Managerial Ideology in Collegiate Business Education', in *Business and Economic History*, (Champaign-Urbana, 1985), p.20. In 1945, areas of specilisation included traffic management, retail merchandising or consular service. In 1949–50, areas of specialisation included bank management, insurance and urban land use. CBSR, Announcement of the Graduate School of Business, 1945–1946, p.18; 1949–1950, pp.31–7.
23. CBSR, Announcement of the Graduate School of Business, 1952–1953, p.37. In 1949, there were 24 areas of specialisation and by 1956 there were 26 areas. According to Assistant Dean Robert Senkeier, the faculty's research interests led to additional specialised courses. See R. Senkier, *Revising a Business Curriculum: The Columbia Experience* (New York, 1962), p.10.
24. Students tended to use all of their electives to take courses in their field of specialisation. CBSR, Announcement of the Graduate School of Business, 1950–1951, p.25.
25. The curriculum included a few 'liberal' courses such as business cycles and economic geography. CBSR, Announcement of the Graduate School of Business, 1945–1946, p.12.
26. CBSR, Announcement of the Graduate School of Business, Columbia University, 1957–1958, p.15.
27. Brown, *The Dean Meant Business*, pp.157–64; Gordon and Howell, *Higher Education for Business*, p.267; and Schlossman, Sedlak and Wechsler, *The 'New Look'*, p.242.
28. Many other business schools abandoned courses in manufacturing to focus on marketing and finance. At Columbia however, manufacturing was a required course for the MBA until 1949. CBSR, Announcement of the Graduate School of Business, 1944–1945, p.18 and 1947–1948, p.33. Production management courses were available throughout this period. Ibid., 1952–1953, p.25; 1957–1958, p.15. It remained an area of specialisation in the new curriculum. Ibid., 1960–1961, p.23.
29. CBSR, The Report of the Dean, 1958, p.15.
30. Many university faculty members thought Columbia had already moved too far from the 'scientific' and 'theoretical' to the 'professional' and 'technical'. They resented the business school. See Van Metre, *A History*, p.20. For information about the disputes over the school's curriculum and mission, see Brown, *The Dean Meant Business*.

Even Dean Brown admitted he had difficulty reconciling 'liberal education' with business education, p.142.

31. Brown, *The Dean Meant Business*, pp.139–40.
32. See for example, CBSR, Minutes of the Committee on Instruction 7 Nov 1951, Memo No.190, pp.1–2; and Memo to the Committee on Instruction, Minutes of the Committee on Instruction, 16 March 1956, No.205.2. File No.205.2. File No.205.2 contains several other memos on this issue. One professor justified specialisation by saying 'I have known several students who selected Columbia over Harvard because of this opportunity'. Memo to Dr Fisher from Dr Hance, p.2. The political tenor of the times may provide a further reason for faculty reluctance to abandon specialisation. The drive to reform Columbia's curriculum occurred during the McCarthy era, a time of great stress for many universities. Like many of their academic brethren, business school faculty members may have believed they were preserving academic freedom by ensuring their academic control.
33. For example, in 1951, the school's Dean Young complained that 'traditional departmental compartmentalism fails to give the students an integrated approach to the problem of business management'. In 1953, the Beckhart Committee noted, 'Although there are only 15 recognized divisions in the School, there are 26 possible fields of specialisation. This . . is . . . not consistent with the general policy of the School'. (Here again we have the conflict between the espoused strategy and its real world results.) Senkier, *Revising a Business Curriculum*, pp.11, 13–15. Although four committees were organised in the 1950's to introduce curricular changes, Columbia's faculty thwarted reform until 1959.
34. They stated, 'our faculty must of necessity be an aggregation of specialists'. These reasons were cited in the Report of the Beckhart Committee, 1955, as quoted in Senkier, *Revising a Business Curriculum*, p.13.
35. Columbia's curriculum revision was initiated by a memo from Dean Brown in March, 1955 and consummated in September, 1960. The Dean seemed to be the perfect leader for reform at Columbia. He had received a doctorate from the school and had years of high-level business and government experience. He was not well-liked, however. According to former Assistant Dean Senkier, some faculty expressed reservations because he was not an 'academic man'. 'If the new Dean makes an attempt to apply business methods in the operation of this institution', they said, 'it will be resented'. See Ibid., p.17.
36. Senkier, *Revising a Business School Curriculum*, pp.18, 23, 70, 88. The new curriculum emphasised breadth of education rather than technical preparation for business. It represented a concensus on the functional areas of business in which all students should be literate. This included balancing core areas of study of management with the areas of specialisation. The core curriculum included eight required courses: 'World Resources'; 'Conceptual Foundations of Business'; 'Business Decision-Making'; 'Human Behavior in Organisations'; 'Quantitative Methods'; and 'Policy Determination and Operations'. Core courses totalled 29 of 60 required credits. CBSR, Announcement of the Graduate School of Business, 1960–1961, p.15. Students could take 15 points of electives and 15 points in an area of specialisation. Available electives included economics; maths; political science; philosophy; and history. Areas of specialisation included banking; business economics; finance; industrial relations; international business; marketing; production; and management. See CBSR, Report of the Dean, 1960, p.11.
37. Senkier, *Revising a Business Curriculum*, p.17.
38. Brown, *The Dean Meant Business*, p.160–3. See also CBSR, Committee on Instruction, Memorandum, 4 Nov. 1955, Item No.213, 'Proposed Curriculum Changes in the Field of International Business'.
39. CBSR, Report of the Dean, 1958, p.17 and Minutes of the Committee on Instruction, 11 May 1959, Item No.280, pp 1–4. Promotion criteria may have changed slightly during this period. See Brown, *The Dean Meant Business*, p.192.

40. CBSR, Minutes of the Committee on Instruction, Item No.298, Memo from Dr William Newman, p.1.
41. The ostensible purpose of academic research in all disciplines is to 'add to knowledge'. Gordon and Howell, *Higher Education for Business*, p.380 and Hofstadter and Hardy, *The Development and Scope*, p.57. For this study, I have divided business research into three areas: pure research creates new, more efficient modes of management or new understanding (e.g. data processing, human relations); adaptive research facilitates business adaption to changing technologies and markets (e.g. studies of ways to increase steel industry productivity); and finally, predictive research develops models used to anticipate economic or technological changes (e.g. research on the ageing of America and how this will increase demand for preventative medicine). Adaptive research is often done by consultants. All three types of research serve business.
42. In 1949, the faculty included 3 BAs; 3 BSs; 3 MAs; 3 MSs; 2 MBAs; 4 CPAs; 1 LLD; 4 LLBs and 28 Ph.D.s. In 1959, the faculty included 1 BA; 6 MSs; 1 MA; 3 MBAs; 4 CPAs; 5 LLBs; 1 LLD; 5 Ph.D./LLDs; 1 DCS (a doctorate in Commercial Science from Harvard); and 33 Ph.Ds. See CBSR, The Announcement of the Graduate School of Business, 1949–50, pp.8–10 and 1959–60, pp.5–8.
43. CBSR, Report of the Dean, Appendix, Faculty Publications, 1953–1958.
44. During this period, Carnegie Mellon and the University of Chicago had the most notable research records. Carnegie Mellon's reputation was derived from its work in organisational behaviour and from strong interdisciplinary research. The University of Chicago was noted for its work in bridging business and the social sciences, as well as its orientation toward scientific work in the study of business. See Schlossman, Sedlak and Wechsler, *The 'New Look'*, pp.18–19, 27, and 36–7; Pierson, *The Education of American Business*, p.313; Gordon and Howell, *Higher Education for Business*, p.391; and telephone interview with Professor William Newman, Columbia University Graduate School of Business, 29 Dec. 1988.
45. During the post-war decades, Columbia University had an outstanding reputation as a research university. Its leading departments included physics and sociology, as well as the faculties of law, engineering and medicine. The business school frequently used professors from other departments to teach at CBS, including sociology, engineering, mathematics and economics. Such fields were important and frequent contributors to research in business. Gordon and Howell, *Higher Education for Business*, p.381. However, interdisciplinary research was rare at CBS in this period. See CBSR, Report of the Dean, Appendix, Faculty Publications, 1953–1959, and telephone interview with Professor William Newman, Columbia University Graduate School of Business, 29 Dec. 1988. Collaborative work would later bloom at Columbia's business school, especially in sociology.
46. Schlossman, Sedlak and Wechsler, *The 'New Look'*, and Brown, pp.149, 152. In my opinion, the work of Eli Ginzberg on labour economics, William Newman and Leonard Sayles in management and Otto Serbein on health care were notable exceptions during this period. The faculty of the international business division also stands out in their early recognition of the need for coursework in how different cultures affected business. CBSR, Minutes of the Committee on Instruction, No.213, Memo from Dr Roy Blough to the Chairman of the Curriculum Committee, 4 Nov. 1955.
47. Schlossman, Sedlak and Wechsler, *The 'New Look'*, p.27. Also telephone interview with Professor William Newman, 29 Dec. 1988.
48. CBSR, Announcement of the Graduate School of Business, 1952–1953, 'Special Advantages', p.10.
49. Some low-level executives were allowed to matriculate part-time at the school, allowing some full-time students to interact with business practitioners. Van Metre, *A History*, pp.99–100.
50. Ibid., pp.100–101; CBSR, Report of the Dean, 1958, pp.24–5. The programme was held at Arden House, off the business school campus.

51. Van Metre, *A History*, pp.81 and 102.
52. There was one important exception where CBS students did solve real business problems. Columbia had a course where an executive would present a problem, which the students would assess, and then make recommendations. See Pierson, *The Education of American Businessmen*, p.290. Some businessmen served as guest or adjunct faculty. Two of the most famous were Harlow S. Person, an expert on management and Benjamin Graham, an expert on securities analysis. Van Metre, *A History*, pp.74–75.
53. Brown, *The Dean Meant Business*, pp.149–50 and Van Metre, *A History*, p.112.
54. Senkier, *Revising a Business School Curriculum*, p.90. On the recommendation of the University Trustees, the Visiting Committee was established to advise the School on its programme. Ironically, even 'the Council members expressed the hope that the School's new program will prove liberal'.
55. Its main function 'was to be a financial contributor . . . to the more important facilities of the University'. Brown, *The Dean Meant Business*, p 144.
56. Even the school admitted that the curriculum trained students for the first job through an emphasis on facts and skills. See Senkier, *Revising a Business School Curriculum*, p.92 and Gordon and Howell, *Higher Education for Business*, p.299 and 299n. Until 1959, Columbia's students were directed towards one 'best' functional approach to managing business (accountants got a bottom-line focus; personnel a labour-relations focus; and so on), rather than a unified managerial perspective.
57. The business school (HBS) sits apart from the university on the Boston side of the Charles River, closer to Boston's business district. Its physical distance from the university is symbolic of its financial and administrative independence.
58. The case method is a tool for studying business practice through the history of a particular incident or problem confronted by one or several firms. For example, a steel industry case can be written from the perspective of a steel worker or steel company president. Students analyse these situations, make recommendations for business policy and actions, and weigh the implications of their recommendations in class. In class discussions, students gain an understanding that there is no one correct managerial answer It is probably as close to practical experience as one can get in a classroom.
59. Interview with Professor Alfred D. Chandler, Jr., Harvard Business School, 10 Jan. 1989. Other business schools would produce the corporate staff: accountants, financial managers, or public relations executives. Harvard graduates would be trained to manage many different types of employees, products and services. For a definition of line and staff, see A. D. Chandler, Jr., *The Visible Hand* (Cambridge, MA 1977), pp.106–107.
60. This means good 'line men'. See Cruikshank, *A Delicate Experiment*, pp.159, 198.
61. Because of this focus, HBS graduates would not reap the full benefits of their training until some 15 years after their graduation. Schlossman, Sedlak and Wechsler, *The 'New Look'*, pp.22–23 and Copeland, *And Mark an Era*, pp.148–9
62. L. Shames, *The Big Time* (New York, 1986), p.18; Silk, *The Education of Businessmen*, p.17; and Schlossman, Sedlak, and Wechsler, *The 'New Look'*, p.21. The Ford Foundation noted that Harvard's standing in the business community was unequalled.
63 Pierson, *The Education of American Businessmen*, pp.287, 429, 725–726; Shames, *The Big Time*, pp.17–18, 27; Copeland, *And Mark an Era*, pp.122–3
64. Shames, *The Big Time*, p.18.
65. Harvard Business School Catalogue (hereafter HBS Catalogue), 1959–1960, pp 21–22 and 'Success of a Strategy,' (1979) p.1 Of these three functions, Harvard clearly stressed the first two. See HBS Catalogues, 'Objectives of the School', for the years 1945. 1960. All of the HBS catalogues and course outlines are available in hard copy or on microfiche at Baker Library (hereafter BL). I am grateful to Florence Lathrop, Curator, and Elise Thall, Assistant Curator, for their assistance.

66. Interview with Professors Kenneth Andrews and Harry Hansen, Harvard Business School, 9 Jan. 1989. My study of the school's yearbooks indicates that women were not perceived as potential leaders during this period
67 BL, HBS Catalogue, 1953–1954, p.65; 1957–1958, p.48, 1959–1960, p.51. HBS attempted to study the personal characteristics linked to the business success of its earlier graduates and replicate these qualities in new candidates for admission. Gordon and Howell, *Higher Education for Business*, p.337n.
68. Description of the required second-year course, 'Administrative Policy' in BL, HBS Catalogue, 1948–1949, p.32.
69. Interview with Professor Alfred D. Chandler, Jr , 10 Jan. 1989. A brochure to potential recruiters, 'Selecting Tommorow's Management Leaders from Today's Graduates' (1960), pp.3, 5 in BL noted that all of the business school's students had been 'carefully prescreened . . . Their two years of graduate study of close to 100 cases . . . will have developed their analytical abilities . . . and understanding of management problems'.
70. BL, HBS Catalogue, 1949–1950, 'Placement Section', p.93.
71. With these mechanisms, HBS was able to perpetuate the success of its graduates. BL, 'Selecting Tommorow's Management Leaders from Today's Graduates', pp.3, 5.
72. 'In the business world . . . it is the ability . . . to weigh diverse influences that leads to sound judgement; and that ability can be developed only through practice'. BL, HBS Catalogue, 1959–1960, p.23.
73. BL, *Planning for Change, Report of the MBA Study Committee*, (Graduate School of Business, Harvard University Sept. 1961), pp.14–15, 27–28; Copeland, *And Mark An Era*, pp.176–8.
74. BL, HBS Catalogue, 1949–1950, p.34, 1959–60, pp 29, 36–37, 48. These courses included 'Government and Business', 'Economic Aspects of Public Policy', and, after 1959, 'Business Responsibility in American Society', 'Business Policy' and 'Business, Society and the Individual'.
75. BL, HBS Catalogue 1949–1950, p.23; 1958–1959, pp.45–46, 124–126, 138.
76. Production was a required part of the first-year coursework. BL, HBS Catalogue, 1954–1955, p.33; 1959–1960, p.31. In 1947, it was part of the 'Elements of Administration' BL, 'Elements of Administration, Production, Volume I, 1946–1957.
77. BL, 'Success of a Strategy', p.19. This course was offered throughout the 1950s. HBS relied solely on cases to explore the planning process. But because cases can only deal with problems business has already experienced, such cases cannot adequately deal with future changes.
78. Gordon and Howell, *Higher Education for Business*, p.346.
79. M. McNair, *The Case Method at the Harvard Business School* (New York, 1954), pp.99, 178–87, 285–90. Also interviews with Professors Kenneth Andrews and George Lombard, 9 Jan. 1989. Most of these home-grown faculty members had never worked in business.
80. Gordon and Howell, *Higher Education for Business*, pp.349–53 and Cruikshank, *A Delicate Experiment*, p.194.
81. BL, HBS Catalogue, 1949–1950, pp.10–11; 1959–1960, pp.14–16. Of a sample of 40 professors in 1949–1950: there were 2 BAs; 6 MAs; 8 MBAs; 1 had a Doctor of Philosophy; 9 Ph.Ds (for some reason this was listed differently than Doctor of Philosophy); and 12 had a DCS. (Doctorate of Commercial Science from HBS). Of a sample of 51 faculty members in 1959–1960: there were 9 BAs; 3 MAs; 11 MBAs; 1 M. Phil.; 9 Ph.D.s; 2 LLBs; 2 MDs; 6 DCSs; and 7 DBAs (doctorates in Business Administration). As this reveals, Harvard's faculty had become more diverse.
82. HBS professors were expected to teach large classes and develop research in the case method. Gordon and Howell, *Higher Education for Business*, p.404; BL, 'Success of a Strategy,' pp.26–7. They were also expected to be interchangeable, especially at the junior levels. Thus, a Harvard professor might teach 'Business Policy' one year, do case research the next, and teach Marketing the subsequent semester. HBS

faculty members were expected to be research and teaching generalists. After several years of experience, they were also expected to do specialised or project research. Many on the faculty, whether junior or senior, were given the title Professor of Business Administration, rather than a specialist's title. Cruikshank, *A Delicate Experiment*, pp.139–40, 175, 270. Also interviews with Professors Harry Hansen, Kenneth Andrews and George Lombard on 9–10 Jan. 1989.

83. Even in teaching theoretical disciplines such as economics, faculty members relied principally upon cases. Collateral readings were rarely assigned. The school utilised the findings of related disciplines, but kept its instruction free from their intellectual control. Copeland, *And Mark an Era*, pp.176–7.
84. BL, 'Success of a Strategy', pp.1, 26–29.
85. Ibid., p.27
86. A HBS faculty committee admitted that dependence solely upon cases made it difficult to teach problems of increasing scope (such as technological obsolescence) and newly emerging techniques (such as linear programming and sampling). BL, 'Planning for Change, The Report of the M.B.A. Study Committee', p.20.
87. Cruikshank, *A Delicate Experiment*, pp.165–7 and 170–5, describes the Western Electric Studies. These studies influenced business practice in the area of Human Relations.
88. Interview with Professor Keith Butters, 24 Jan. 1989. See also Copeland, *And Mark an Era*, pp.187–8 and pp.238–53; Gordon and Howell, *Higher Education for Business*, pp.32 and 386.
89. Interviews with Professors Alfred D. Chandler, George Lombard, Harry Hansen and Kenneth Andrews, 9–10 Jan. 1989. See also Copeland, *And Mark An Era*, pp.183–6 and 227–36; BL, 'Success of a Strategy', p 27; and Schlossman, Sedlak, and Wechsler, *The 'New Look'*, p.68.
90. The faculty generally produced adaptive, not highly innovative research. The school led, however, in researching government regulation of business and the social responsibilities of business. In addition, HBS innovated in human relations and business history.
91. BL, HBS 'Annual Report' of 1954, p.17.
92. As at Columbia, students and executives did not mingle in class, although these classes were held on campus during the school year. Copeland, *And Mark an Era*, p.127–8.
93. Interviews with Professors Alfred D. Chandler, George Lombard and Kenneth Andrews, 9–10 Jan. 1989. See also BL, 'Success of a Strategy', p.4; Copeland, *And Mark An Era*, pp.125–31. The Advanced Management Program for Businessmen began in 1945, the Middle Management Program began in 1954.
94. Harvard did not include many practising executives on its faculty during this period. Like Columbia, Harvard did have some notable exceptions, such as George Doriot. Most faculty business experience was as consultants, however, not as hands-on managers.
95. Alumni and research publications were widely disseminated. In 1944–48, over 85,000 copies of Harvard research materials were distributed. See BL, 'Success of a Strategy', p.29; Pierson, *The Education of American Businessmen*, pp.577–608; Gordon and Howell, *Higher Education for Business*, pp.368, 370–1. But the *Harvard Business Review* was HBS' most prominent publication, growing in circulation from 15,000 to 60,000 by 1960. Ninety per cent of its readers were businessmen, but only ten per cent were HBS graduates BL, *HBS Alumni Bulletin*, March/April 1966, pp.7–10.
96. BL, *HBS Alumni Bulletin*, Sept./Oct. 1963, p.27.
97. For example, HBS had a full-time Director of Alumni Relations, an Associate Dean for External Affairs, and a Director of Placement. BL, *HBS Alumni Bulletin*, Sept./Oct. 1963, pp.28–9; Copeland, *And Mark an Era*, pp.326–38.
98. Harvard played catch-up in the new management sciences. Sass, 'The Managerial Ideology', p.205

99. Although Harvard and Columbia had radically different ideas of proper management, training at both schools may have led to management arrogance. Harvard students may have been deluded into thinking their work would lead them to senior management. Columbia's functional orientation may have led to a functional management bias. See Pierson, *The Education of American Businessmen*, p.242–5. Such management arrogance may have been reinforced by the market for MBAs and the ease with which such executives moved up the corporate ladder. This gave MBA training a seal of approval and market advantage that may not have been fully deserved. In 'The Enduring Logic of Industrial Success', p–442, Alfred D. Chandler, Jr. notes that managers were 'told by academics that management was a general skill'. In 'Managerial Enterprise and Competitive Capabilities', earlier in this volume, he identifies business schools in the 1960s as encouraging management arrogance, leading to the conglomerisation trend. Conglomerates are large corporations composed of many different divisions, which are not necessarily related by product line, technology, production method or markets. Also see interview with Alfred D. Chandler, 10 Jan. 1989.

100. Robert Locke has provided a good overview of how other nations educated their future business leaders in *Management and Higher Education Since 1940*. Clearly, many non-US companies have flourished without business schools training their management. However, it is very difficult to speculate if those nations would have been better off with or without business schools. For example, my research is not on the British case. But there is reason to believe that prior to 1960, the UK might well have benefited, not so much from graduate business schools, but from having recognized the need for a higher degree of professionalisation of management based on ability, not pedigree.

Regulatory Responses to the Rise of the Market for Corporate Control in Britain in the 1950s

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On both sides of the Atlantic the post-war years have seen 'the coming of an institutionalised market for corporate control'.[1] For the first time it became possible for the ownership of public companies to be determined simply by stock market transactions and for control to pass thereby to parties previously unconnected with a firm. Chandler identifies this development, the buying and selling of companies, as one of the factors undermining 'the dynamics of managerial enterprise' in post-war America. In Britain the market in corporate control began in the 1950s, rather earlier than in the United States. It is the responses of the 'authorities' – the commonly used shorthand for the Bank of England and the government departments concerned with economic affairs – and the City to this development which is the subject of this article.

I

Mergers between firms are as old as the joint stock company and a natural feature of a market economy. Besides regular annual occurrences, there have been surges in merger activity in the 1880s, at the turn of the century, immediately after the First World War, in the late 1920s, in the mid-1930s, following the Second World War, in 1953–54, 1959–61, 1968, 1972, 1978–79 and 1984–87.[2] Merger activity between 1949 and 1962 is depicted in Figure 1. Prior to the 1950s mergers were effected by private negotiations between boards of directors and no need was perceived for a set of rules for their conduct beyond the minimal framework provided by the Stock Exchange rule book, the Companies Acts, and the law of the land on fraud. Though the inter-war amalgamation waves aroused expressions of concern about competition, no significant anti-trust measures were introduced.[3] The post-war Labour government was more concerned about the abuse of market power by companies than previous administrations and in 1948 it enacted the Monopolies and Restrictive Practices (Inquiry and

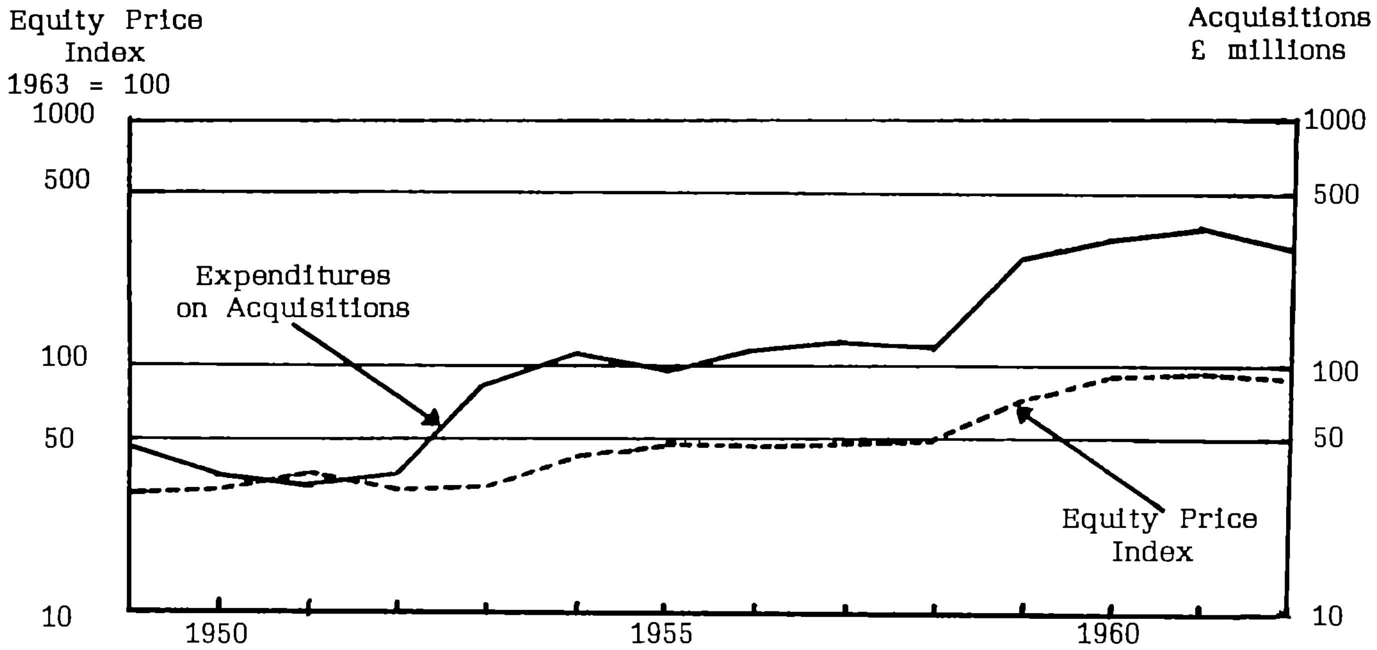
Control) Act which established the Monopolies and Restrictive Practices Commission.[4] This body was charged with investigation of cases referred to it by the Board of Trade to establish whether restrictive agreements between firms or dominant market positions operated against the public interest. However, it was not until 1965 that the impact of amalgamations became a subject of special scrutiny, which was signalled by the change of name to the Monopolies and Mergers Commission. The Companies Act of 1948 was a milestone in many aspects of company regulation, but its provisions regarding the conduct of amalgamations were scant.[5] One other statutory constraint warrants mention, the Prevention of Fraud (Investments) Act, 1939, which specified channels of communication with shareholders, but it was not intended and did not act as a brake on amalgamations. In summary, effectively there were no statutory regulatory obstacles to the conduct of mergers during the 1950s and companies could in theory be bought through the stock market virtually without hindrance.

The early 1950s saw the emergence of a new phenomenon – the 'take-over'. A take-over, a term which became current in 1953, was the acquisition of a publicly quoted company by the purchase of a majority of its shares by another firm without the agreement of the directors of the acquired company. 'Offers made over the heads of the Boards concerned', was a working definition adopted at the time.[6] It was with the advent of the take-over that the market in corporate control came into being. Chandler has identified a link between the emergence of institutional shareholders as the principal owners of American firms and the development of the market for corporate control. Britain experienced a similar transformation of the pattern of ownership of public companies but the take-over anticipated these changes and is explained by other factors.

Hannah has drawn attention to the more stringent financial disclosures required of company accounts by the 1948 Companies Act, which for the first time provided the basis upon which corporate predators could make reasonably accurate estimates of asset values and earnings and thus launch bids without the co-operation of the prey.[7] Contemporary explanations of the advent of the take-over bid stressed the 'abnormal circumstances' of the post-war years.[8] 'Why was there a spate of startling take-over bids in the years after the World War II?', asked Bull and Vice, a pair of financial journalists, in 1958.[9] 'The brief answer is that various factors combined, after the war, to produce exceptionally favourable opportunities for the bidder'. They identified four such factors.[10] First, and 'most important and all-embracing', were the structural changes to the British economy during and since the war – changes which

FIGURE 1

EXPENDITURES ON ACQUISITIONS ON SUBSIDIARIES AND EQUITY PRICE INDEX, 1949–1962



Sources: *Annual Abstract of Statistics* (HMSO); *The British Economy: Key Statistics 1900 – 1970* (London and Cambridge Economic Service, 1972), Table M.

had created a gulf between the most and least efficient firms which 'was where the bidder saw, and seized, his opportunities'. Second, the increase in company taxation from 37 per cent of gross trading profits in 1938 to 56 per cent in 1952, which led to a reduction in the proportion of profits distributed in dividends to shareholders from 52 per cent in 1938 to 20 per cent in 1952 in order to retain adequate funds for the business. Share prices reflected the reduced pay-outs rather than the increases in asset values and earnings which made it cheap to buy assets and earnings, by buying companies. Third, the large cash reserves prudently held by many companies because of inflation and uncertainty were tempting treasures for raiders. Fourth, the eagerness of shareholders to realise tax-free capital gains rather than highly-taxed dividend income. A list of factors compiled by the Oxford economist J.F. Wright a couple of years later made the same points plus a few more, in particular the role of dividend restraint in depressing share values and the attraction to bidders of cash and liquid assets in an era of restrictions on bank borrowing and access to the capital market because of the Capital Issues Committee.[11] Of course, most contemporary comment paid no heed to such matters and ascribed the phenomenon to the dynamism and ruthlessness of a new breed of financiers. In the popular press, where take-overs received plentiful attention in the 1950s, they were portrayed as swashbuckling duels whose 'distinctive flavour' was the regular trouncing of the Establishment by buccaneer outsiders.[12]

The first of the sensational take-overs was Charles Clore's bid for J. Sears & Co., the parent company of the shoe shop chain-store Freeman, Hardy & Willis, in the spring of 1953. Clore, the son of a Jewish immigrant East End tailor who was already a self-made millionaire from business and property ventures, launched his attack on being informed by a partner in the estate agents Healey & Baker that Sears' balance sheet underestimated the real estate value of the firm's 900 high street stores by £10 million.[13] He immediately began to establish a shareholding by buying in the market and set his own staff to work on the bid, which was conducted without the services of a merchant bank, as were all his take-over operations in the 1950s. The bid was conducted over the heads of the Sears board by mailing offer documents direct to shareholders, a tactic hitherto impossible because of paper rationing. The Sears directors, who were taken entirely unawares, retaliated by announcing the tripling of the dividend. Shareholders were astonished by this sudden largesse which was perceived as a desperate and irresponsible act on the part of the management. Faith in the incumbent board being thoroughly undermined, there was a rush to sell to Clore, who quickly acquired control of the company. 'We never thought anything like this would happen to us', were the Parthian words of the outgoing Sears chairman.[14]

The struggle for Sears prompted the Bank of England to consider its attitude towards take-overs, and an internal document was prepared which examined their causes and consequences.[15] It was acknowledged that a case could be constructed, as had been done by some financial journalists, that take-overs promoted the efficient use of corporate assets, but the author was sceptical about the ability of 'syndicates of financiers' to judge what was in the best interest of firms and deplored the pressure upon management to abandon prudent conservative accounting practices. 'This kind of manoeuvre', he warned, 'may mean the break-up of businesses which are making an important contribution to the country's needs'. Moreover, take-overs constituted a threat to macro-economic management since they undermined adherence to the government's policy of dividend restraint and were inflationary. As for motives, bidders were simply out to realise non-taxable capital gains through the manipulation of share prices and property assets, a sort of peacetime profiteering. In the spring of 1953 the Bank's sympathies plainly lay with the 'victim companies' and take-overs were regarded as against the national interest.

Take-overs were back in the headlines that autumn when it became known that someone was building up a shareholding through nominees in the Savoy Hotel Co., the owner of the famous Savoy, Claridge's and Berkeley hotels and Simpson's Restaurant in the Strand.[16] Clore was the prime suspect, though not the only one, and during October the Savoy directors endeavoured to establish his intentions and to identify the purchaser of the company's shares. Early in November the Prime Minister, Winston Churchill, received a request from the chairman of the Savoy, Hugh Wontner, for a meeting to discuss the company's situation.[17] Churchill was a long-standing *habitué* of the Savoy – the venue for the fortnightly gatherings of The Other Club, his favourite dining club which he and F.E. Smith had founded in 1911 – and a friend of Wontner, who had let him know early on that the firm was 'in trouble'.[18] The meeting took place on 10 November and immediately afterwards Churchill asked the Chancellor for a briefing note about take-over bids, expressing particular concern about the Savoy.[19] Reginald Maudling, the Economic Secretary to the Treasury and charged with the preparation of the note took up the question with the Governor of the Bank of England, Cameron Cobbold, who in turn consulted Sir John Braithwaite, Chairman of the Stock Exchange, Lord Aldenhan, Chairman of the Westminster Bank, and Sir Alan Rae Smith, a chartered accountant who was financial adviser to the government and a director of the Savoy Hotel. Maudling's note, delivered on 13 November 1953, read:

> It creates a bad public impression when large capital profits are seen to be earned by mere financial manipulations. It is also a danger to the Chancellor's policy of voluntary restraint, both of wages and dividends. The Boards of companies whose shareholders are likely to be approached in this manner are tempted to increase their dividend distributions substantially in the hope of increasing the Stock Exchange valuation of their shares, so making the take-over bid less attractive, though in some cases this can be bad from the long-term interests of their companies.
>
> But, while the process is distasteful, and may be politically embarrassing, it is difficult to see anything that the Government can do about it. It is impossible by legislation to prevent individuals offering to buy the property of other individuals. Yet, short of such legislation, there is really nothing that would hamper the process, nor is it possible to do anything to dry up the source of finance for the speculators concerned.
>
> I have consulted the Governor of the Bank of England, who shares our dislike for many of these operations, but tells me that so far he himself, despite much thought on the subject, has reached the same conclusion, that there is no action that either the Government or the Bank can properly take in the matter.[20]

On the same day Churchill also received a memorandum from Peter Thorneycroft, the President of the Board of Trade, on the Savoy Hotel Co. share purchases. Referring to that situation in relation to the department's responsibility for the enforcement of the Companies Acts, Thorneycroft told Churchill that 'there is nothing that the government can do under existing legislation to check operations of this kind, in the absence of fraud'.[21] He informed the Prime Minister that following consultations with the Chairman of the Stock Exchange Council and the government Law Officers he had explained to Wontner the form in which an application could be made under Section 172 of the 1948 Companies Act for the appointment of an inspector to establish the true identities of the Savoy's nominee shareholders. Wontner had immediately made such an application. 'This is the first time that this section of the Act has been invoked for the purpose of an enquiry into this kind of situation', reported Thornycroft. He also registered that the Board of Trade had 'solid objections' to legislation to restrict take-overs.

In summary, by mid-November 1953, galvanised by Churchill's concern about the Savoy Hotel, the authorities were agreed that take-overs were politically undesirable and economically harmful. The obvious remedy was legislation to ban or curb hostile bids, but this was ruled out for practical and ideological reasons. However, officials were not content to let the matter rest and explored informal ways of curtailing take-overs. At the Bank of England attention focused upon restrictions on the use of nominee names on share registers, but the scheme foundered because of doubts about its effectiveness and because it required an amendment to the 1948 Companies Act which, as a Bank official put it, 'would not be especially welcome to HMG'.[22]

Meanwhile, the Treasury was pursuing a different and ultimately fruitful line of thought. 'We must have an answer to the question "why cannot you control the raising of money by Clore & Co?"', wrote the Treasury official Edmund Compton to Sir Kenneth Peppiatt, executive director at the Bank of England.[23] 'First', continued Compton, 'have you any positive information as to who the lenders may be? Secondly, have you any comment to make on the suggestion that influence might be brought to bear on those lenders to withdraw support from the less reputable take-over operators?' Peppiatt's reply identified three possible sources of bidders' finance besides their own funds: British banks, foreign banks and the insurance companies.[24] But British banks were bound by the Chancellor's 'request' of December 1951 not to lend for the purpose of speculation, which was deemed to include the finance of take-over bids, and he informed Compton that he was aware of several occasions on which bridging finance for bids had been denied. On the other hand, he had also heard that American, French and Belgian banks had provided funds for take-overs. Even more important were the insurance companies which advanced funds to bidders and then purchased from them prime commercial properties acquired through the take-over, which provided the bidders with the means of repaying their borrowings. The authorities determined to plug these sources of funds, and, on 3 December 1953, after consultations in the City, the Governor sent a letter to the banking and insurance industry associations reminding them of the Chancellor's request regarding the finance of speculation of two years earlier. Privately it was made clear to the chairmen for relay amongst their members that the authorities regarded the finance of take-overs as speculation and wished it to stop, a classic example of the Bank of England exercising informal regulatory control over the City of London.

On 7 December 1953, the *Daily Telegraph* ran an article headlined 'Insurance Companies Warned by the Bank' which revealed the dispatch of the Governor's letter and reported that its purpose was to curb the support for take-overs provided by American banks and British insurance companies. The source of the *Telegraph* story was a loose-tongued assistant general manager of one of the insurance companies, but an officially contrived leak could not have been more effective in achieving the Bank's objectives.[25] Spokesmen for the American banks protested to the Bank that the report was 'totally unfair and misleading', but in an audience with the Deputy Governor the manager of the Bank of America, which was known to have participated in financing both the Sears and Savoy bids, sheepishly admitted involvement in 'two or three takeover bids', appearing 'uncomfortable and clearly worried'.[26] A few days later the Governor received a letter which amounted to a remarkable collective supplication by the American banks in London, assuring him that they were 'glad to co-operate and to be guided by the wishes which had been expressed'.[27] The episode demonstrates that in the 1950s foreign banks operating in the City were as susceptible to a nod from the Governor of the Bank of England as their British counterparts, suggesting that it was not the influx of foreign firms but the intensification of competition which led to the demise of the informal 'gentlemanly' form of regulatory control over the City by the Bank of England from the 1960s.

The insurance industry was also deeply disconcerted by the public revelation of the Governor's displeasure. The chairman of the British Insurance Association arrived in the office of the Deputy Governor in a state of great agitation complaining that his members were being unfairly pilloried. Only with difficulty was he persuaded from 'stoking the fire', as the Governor put it, by issuing a vindication of the insurance industry to the press.[28] Cobbold was aware that the Labour Party was beginning to perceive political advantage in the issue of take-overs and there was concern at the Bank about the Parliamentary Question tabled by the Labour shadow Chancellor, Hugh Gaitskell, for 15 December 1953. Cobbold hoped that his actions would satisfy the opposition and put paid to 'these transactions (which) are disruptive to the community and bad for the City's prestige'.[29]

Meanwhile, the struggle for the Savoy Hotel had been resolved. The report of the Board of Trade inspector, published on 1 December, revealed that it was the Land Securities Investment Trust, chaired by Harold Samuel, which was stalking the Savoy and controlled almost 40 per cent of the equity, about as much as the Savoy directors. A day later the Savoy board announced that the company's principal assets were to be transferred to the Worcester Buildings Co., a private company whose equity was owned by the Savoy staff pension fund whose trustees were on the side of the Savoy board. This was a tactic to ensure that even if Samuel secured a majority of the equity he would be unable to control the assets. City reaction was 'sharply hostile', reported the *Financial Times*, because of the scheme's 'inequitable nature and the dangerous precedent it sets in separating ownership of assets from their control'.[30] Although the scheme was subsequently approved by the Board of Trade it was never implemented since on 10 December 1953, to the astonishment of observers, it was announced that the Savoy board was purchasing Samuel's shareholding. This solution satisfied both the Savoy directors, who retained their company, and Samuel, who made a handsome profit. The Bank of England was happy at the prospect of the end of such episodes and a few days later the Governor concluded some words on take-overs to a Stock Exchange audience with the remark that 'I hope that this little storm may be dying down and that what I have said may be in the nature of a postscript'.[31]

Cut off from credit, bidders had to rely on their own resources to mount cash bids and were constrained from offering payment in shares by capital issue consent requirements and the bearish stock market. Bids did not cease, but most likely they were fewer in number and smaller in scale than would otherwise have been the case. The effect of the authorities' action in December 1953 was to ensure that take-overs did not become 'normal commercial exercises' in the mid-1950s but remained 'financial curiosities'.[32]

II

The merger wave of 1959–61 was a product of the bull market of these years (Figure 1). The relationship between rising stock markets and upsurges in merger activity has been noted on both sides of the Atlantic and stems from the disparity in valuations between highly-rated companies and poor performers, enabling the former to use their shares to acquire the latter.[33] A feature of the merger wave of 1959–61 was the spate of take-over bids unprecedented in number and size. Behind the bid boom lay two new factors. The first was the availability of external finance, which came about because of the relaxation of controls on bank lending in July 1958 and the abolition of the necessity for Capital Issues Committee consent for securities issues in February 1959. The second was a change in the attitude of the 'financial Establishment', which hitherto 'had tended to regard the bidder as an outsider'.[34] The origins of this shift were discerned by Bull and Vice in the scramble by the clearing banks to control the City's major hire purchase houses following the abolition of lending limits in February 1958, setting an example which suggested 'that take-over bids were more respectable than many had supposed'.[35] Remaining reservations in the City were rudely swept away by the outcome of the great bid battle for the British Aluminium Co. which filled the headlines at the end of 1958 and the beginning of 1959.

The struggle for control of Britain's major aluminium company began in September 1958 with an approach to the British Aluminium board by Reynolds Metals of Virginia, an American aluminium manufacturer, and Tube Investments (TI), a British engineering and metallurgical firm, which made an offer to purchase the company through a joint subsidiary owned 49 per cent by Reynolds and 51 per cent by TI. The British Aluminium board, led by the pre-eminently Establishment figures Lord Portal, former Chief of Staff of the Royal Air Force, and Geoffrey Cunliffe, son of a former Governor of the Bank of England, rejected the bid and instead arranged for the Aluminium Company of America (Alcoa) to take a controlling interest. However, Reynolds/TI, advised by the merchant banks Warburgs, Helbert, Wagg, and Schroders, were not prepared to accept the board's decision and soon acquired a substantial shareholding through purchases in the market. British Aluminum's advisers, Lazards and Hambros, were outraged and appalled that leading City firms should endorse and orchestrate a bid against the recommendations of an incumbent board of directors, a feeling which was widespread in the City. On New Year's Eve it was revealed that a 'City Consortium', comprising 14 of the most respected names in the Square Mile including the merchant banks Morgan Grenfell, Samuel Montagu, M. Samuel, Brown Shipley and Guiness Mahon and the leading brokers Cazenove and Rowe & Pitman, had been assembled to contest the issue.[36] The British Aluminium bid had become a civil war in the City.

The government became involved in the struggle because both bids required capital issue and foreign exchange consents which were within its power to withold. In December 1958 and early January 1959 the matter was discussed several times in Cabinet and it took up a considerable amount of the time of the Prime Minister, Harold Macmillan, who dealt with it personally because the Chancellor, Heathcote Amory, was a Tube Investments shareholder.[37] Ministers came under pressure to announce decisions on the consents favourable to the Alcoa bid to support the stand of the City Consortium. However, the issue which concerned the Cabinet was not the conduct of take-over bids but the future of the British aluminium industry. By this criterion the Reynolds/TI bid was preferred 'on grounds of national interest . . . mainly because legal control would remain in British hands'.[38] So the Cabinet decided 'to do nothing' knowing 'that Reynolds would continue to buy shares in the market . . . and therefore ensure their success'.[39] On the morning of the announcement of the Reynolds/TI victory, Lord Portal called on Macmillan and expressed 'a very bitter feeling'. 'I did not think it was worth arguing with him about what we had done', noted the Prime Minister.[40]

The Cabinet's decision to favour the Reynolds/TI bid had consequences for the regulation of take-overs which were much more far-reaching than Macmillan probably realised. The humiliation of the City Consortium changed City attitudes to take-overs overnight and henceforth financial advisers added hostile bids to their repertoire of merger and acquisition techniques. Had the authorities still regarded take-overs with the misgivings expressed in the Bank of England's internal memorandum of the spring of 1953 this would have presented a problem, but their attitude had undergone a profound change. Their revised thinking was expressed by Leslie O'Brien, Chief Cashier at the Bank, in a memorandum to the Governor summarising the position in July 1959. 'Developments since 1953', wrote O'Brien, 'have tended to support the view that take-over bidders generally perform a useful function. Mr Clore, for example, appears to have improved the retail shoe trade of the country, Mr Fraser the Barkers Group of shops. Neither they, nor Mr Wolfson nor Mr Samuel, have operated for short-term capital gain, as their critics alleged they would, and all have built up prosperous businesses and helped to develop assets more efficiently . . . In present circumstances Directors generally have only themselves to blame if they are dispossessed by more enterprising rivals'.[41]

O'Brien's memorandum was occasioned by Clore's bid in May 1959 for the 'sleeping giant' of the brewing industry, Watney Mann.[42] The bid was controversial at several levels. The authorities were aroused because it was the first use of outside funds since 1953.[43] In the City it shocked even those who were prepared to defend bids between firms in the same industry on the grounds of rationalisation, since Clore had no brewing interests.[44] For the man in the street it was beer and pubs, matters close to his heart, which were at issue and the episode received enormous press coverage, the public being treated to the spectacle of the senior figures of the brewing industry heaping abuse upon the 'financial raiding party' for its 'preposterous and deplorable' bid.[45] Clore was no stranger to vilification, but this time he decided that discretion was preferable to valour and on 19 June 1959 he withdrew the bid, his first take-over defeat. The reason given by Clore's deputy was the 'preposterous' price of Watneys' shares in the market; but the decision was consistent with the 'considerable feeling of public concern' identified by a *Financial*

Times leading article and the episode marked a turning point of general significance in the development of the take-over.[46]

By the spring of 1959 a general election was in prospect and the controversy over the Watneys bid turned take-overs into a party political issue. The City had long been a *bête noire* of some Labour politicians, and take-overs provided a 'live issue on which to arraign the Government'.[47] As soon as the House resumed after the Whitsun recess a 'barrage of criticism' erupted from the Labour benches.[48] Take-overs were 'economic gang warfare' declared Sydney Irving, the member for Deptford, one of the leaders of the assault which culminated in a Commons debate on the issue on an Opposition motion on 29 June 1959 in which the Chancellor, Heathcote Amory, and Harold Wilson, his Labour 'shadow' led their respective sides. Wilson got the better of the argument and Harold Wincott, the redoubtable *Financial Times* columnist, reported the view that on a free vote the Labour motion would have been carried by a majority of two to one. 'The average person . . . is so offended by the trappings of some bids and mergers that he tends to be sickened by the whole process', wrote Wincott. 'Get hold of a copy of *Hansard* for June 29 and read Harold Wilson's speech. It contains just about the only issues on which the Socialists could win an election these days'.[49]

In the summer of 1959 take-overs became part of the political agenda. During the election campaign Labour politicians called for the establishment of a statutory body along the lines of the US Securities and Exchange Commission (SEC) to police the City and by polling day both Labour and the Conservatives were committed to the conduct of inquiries, which led to the Jenkins Report on Company Law. Furthermore, the Institute of Directors, the Association of British Chambers of Commerce and the Leeds Chamber of Commerce announced the establishment of inquiries into take-over bids. Most importantly of all, the Governor of the Bank of England was spurred to convene a conference out of which emerged an initiative to instigate self-regulation of the market in corporate control amongst City take-over practitioners.

III

The Governor's conference was held at the Bank in secret on 10 July 1959. It was attended by Cobbold and his deputy and the chairmen or deputy-chairmen of the Stock Exchange, the Committee of London Clearing Bankers, the British Insurance Association, the Association of Investment Trusts, the Accepting Houses Committee and the Issuing

Houses Association.[50] Cobbold opened the proceedings by stating the Bank's view of the situation, that take-overs 'had on balance proved beneficial to the economy', but there were some 'troublesome features' of bids and 'the public relations aspect was deplorable'. He then asked the others present at the meeting for their views and suggestions. The City luminaries expressed 'full agreement' with the Bank's assessment of the generally wholesome effects of take-overs, a measure of the transformation of City attitudes in the first six months of 1959 since many of them must have been former supporters of the City Consortium. From Sir Edwin Herbert, chairman of the Association of Investment Trusts, came the observation that 'there was in many quarters a genuine desire for guidance', and by the end of the meeting agreement had been reached to produce 'some code of conduct . . . [for] . . . dissemination in the City'. A body, which became known as the City Working Party, comprising representatives of each of the practitioner organisations present, but *not* the Bank of England, was established to supervise the production of the code of conduct.

The lead was seized by the Executive Committee of the Issuing Houses Association (IHA) which on 17 July 1959, a week after the conference at the Bank, established its own working party to draw up a draft document.[51] At the top of its priorities was 'to find an alternative name for "take-over" as this has been brought into disrepute', which was the origin of the use of the term 'amalgamations'. A first draft was prepared by the chairman of the IHA, J.S. French, a director of the London and Yorkshire Trust who was a former City editor of the *Sunday Times*. After discussion and amendment the document was eventually approved at a meeting at the Bank on 15 October 1959.[52] Evidently it contained nothing unexpected, for O'Brien reported to the Governor that it scarcely required comment. 'Not a very bold document', was his verdict.[53]

While the experts were at work on the code of conduct, a general election was announced on 8 September. Labour politicians made much of City abuses during the campaign and their denunciations of the 'spiv's paradise' appeared to be vindicated by the major City scandal which erupted in the middle of the campaign, the Jasper Affair, involving take-over malpractice and the misuse of building society funds, which, in Cobbold's words, led to a 'song and dance about take-over bids'.[54] Lord Hailsham resourcefully counter-attacked with the accusation that Labour's policy amounted to a take-over bid for Britain.[55] Despite the controversy raging amongst the politicians, no hint whatsoever was given that the City was itself considering the question of take-overs, perhaps because it might have been construed as substantiating the charges of its detractors. It was not until mid-October that the first reports of the preparation of the guidelines appeared in the press; by which time the election was long over.[56]

The 'Notes on Amalgamations of British Businesses' was published on 31 October 1959. It was an an anonymous pamphlet available from the Secretary of the Issuing Houses Association, price 6d. (2½p.) Its eight pages comprised a brief history of 'amalgamations' amongst British companies followed by a statement of four principles governing the conduct of take-overs and a dozen recommendations regarding practice. The principles began with the statement that 'there should be no interference with the free market in shares and securities', which might have been taken as a disavowal of the whole exercise. The others were laudable but vague assertions of shareholder rights. The most venturesome of the suggestions as to practice were those which expressed disapproval of partial bids and the finance of take-overs by the issue of non-voting shares. The frequent use of such phrases as 'it is generally desirable' or 'as a general rule' provided plenty of opportunity to argue exemption.

The press gave a warm welcome to the 'Notes on Amalgamations': 'sensible, concise and well-written', commented the *Economist*; 'strikes a fair balance between the bidder and the bid-for', observed *The Times*; 'encouraging and valuable', was the verdict of the *Financial Times*.[57] The problem of the enforcement of codes of conduct was discussed in a leading article in the *Financial Times* which raised and rejected the idea of a Securities and Exchange Commission for Britain as 'cumbrous and unwieldy' but foresaw the need for a small expert body to review the situation, the first suggestion of the Take-over Panel. The Issuing Houses Association was greatly gratified by the 'wide publicity and favourable comment' and in the month following publication 11,100 copies of the pamphlet were distributed.[58]

With the benefit of hindsight it is plain that the 'Notes on Amalgamations' made almost no difference to the conduct of take-overs in Britain. 'Given little publicity and heeded even less', was the verdict of one authority.[59] In 1963 following a 'minor sensation' over the favour shown to institutional shareholders in the take-over of Whitehead Iron the City Working Party was reconvened.[60] A new document was produced entitled 'Revised Notes on Company Amalgamations and Mergers' – once again the word 'take-over' was eschewed – which took account of developments and adopted a more forthright stance on the equal treatment of all shareholders during bids. The City Working Party was convened, once again, in the summer of 1967 following yet another upsurge of controversy over take-overs. This time it produced a rule book, entitled *The City Code on Take-overs and Mergers*, which defined proper practice for bids. To enforce compliance, the Panel on Take-overs and Mergers, a body with a full-time director-general and staff, was established in 1968.[61] 'This is our last chance before legislation', remarked one of the practitioners responsible for the new arrangements.[62]

IV

The regulatory framework adopted in 1959 for the conduct of mergers and take-overs conformed to the 'self-regulatory' form traditional to the City and to many other aspects of British life. The alternative was the US model of statutory regulation enforced by an independent agency.[63] Labour Party politicians were not the only ones to advocate a British SEC in the summer of 1959 and even the British Chamber of Commerce espoused this course of action, leading the Bank of England to suggest that its enthusiasm should be 'toned down'.[64] The 'Notes on Amalgamations' established self-regulation as the regulatory form for mergers and take-overs, an important extension of the practice. The publication was the first step in the process which led to the establishment of the Panel on Take-overs and Mergers, a body which 'perhaps more than any other, typifies the role and nature of self-regulation in Britain'.[65]

The reaction of the authorities, the City and industry to the first stirrings of the market in corporate control in Britain in the 1950s was suspicion and hostility. The measures taken in 1951 and 1953 to curb 'speculation' restricted the growth of the market in corporate control for most of the decade. The actions of the authorities in 1958 and 1959 had the opposite effect and created the conditions for the take-over booms of the 1960s. First, the government engineered defeat of the City Consortium led the merchant and investment banks to adopt the hostile bid as a quotidian technique for securing control of firms, institutionalising the market in corporate control. Second, by handing over regulation to City practitioners the authorities ensured the least restrictive form of regulatory regime. It is implausible that the experienced officials of the Bank of England believed that a vague voluntary code of conduct would prove a constraint upon the conduct of take-overs – nor did it. But that was the point, because by then the authorities had come to regard take-overs as a means of promoting industrial rationalisation and instilling discipline in management. Chandler, on the other hand, suggests that a market in corporate control may contribute to the neglect of long-term considerations by firms, which can undermine the industrial base of a nation by 'the weakening of the organisational capabilities of managerial enterprises'.[66] Chandler's essay is consistent with a growing body of criticism of 'short-termism', which is alleged to have characterised corporate governance in Britain and the US since the war. In this perspective it is possible that any enhancements of the efficiency of British firms which arose from the advent of the take-over were outweighed by long-term handicaps, in which case the actions of the authorities in the late 1950s which contributed to the rise of the market in corporate control in Britain may come to be regarded as a *faux pas*.

NOTES

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1. A.D. Chandler, 'Managerial Enterprise and Competitive Capabilities', pp.11–41 in this volume.
2. See L. Hannah, *The Rise of the Corporate Economy* (2nd ed. 1983); J. Scouller, 'The United Kingdom Merger Boom in Perspective', *National Westminster Bank Quarterly Review* (May 1987), pp.14–30.
3. P. Craig, 'The Monopolies and Mergers Commission: Competition and Administrative Rationality', in R. Baldwin and C. McCrudden (eds.), *Regulation and Public Law* (1987), pp.202–5.
4. Craig, 'Monopolies and Mergers', p.205; J. Fairburn, 'The Evolution of Merger Policy', in J. Fairburn and J. Kay, *Mergers and Merger Policy* (Oxford, 1989), pp.193–4.
5. D.G. Rice, 'Take-over Bids and the Law', *Banker*, Vol.109 (1959) pp.606–7; J. Charlesworth, *The Principles of Company Law* (6th ed., 1954), pp.290–8.
6. Bank of England, C40/971, f.11, Take-over Bids, Note of Meeting at Bank of England on Friday 10 July 1959.
7. L. Hannah, 'Takeover Bids in Britain Before 1950; An Exercise in Business "Pre-History"', *Business History*, Vol.16 No.1 (1974) p.75.
8. (Issuing Houses Association), *Notes on Amalgamations of British Businesses* (1959) p.3.
9. G. Bull and A. Vice, *Bid For Power* (1958), p.14.
10. Ibid., pp.14–18
11. J.F. Wright, 'The Capital Market and the Finance of Industry', in G.D.N. Worswick and P.H. Ady (eds.), *The British Economy in the Nineteen-Fifties* (Oxford, 1962), pp.465–6.
12. Ibid., p.464.
13. C. Gordon, *The Two Tycoons: A Personal Memoir of Jack Cotton and Charles Clore* (1984), p.51.
14. D. Clutterbuck and M. Devine, *Clore. The Man and His Millions* (1987), p.69.
15. Bank of England, C 40/970, f.2, 'Memorandum on Real and Fictitious Share Bids', 18 March 1953.
16. See Bull and Vice, *Bid For Power*, pp.29–46.
17. PRO, PREM/656, Note from J.C. Colville, Prime Minister's Office, to the Prime Minister, 5 Nov. 1953.
18. M. Gilbert, *Winston S. Churchill: Never Despair, 1945–1965*, Vol.VIII (1988), p.318.
19. Bank of England, C 40/970, f.4, Governor's note on meeting with Reginald Maudling, Economic Secretary to the Treasury, 13 Nov. 1953.
20. PRO, PREM/656, Letter from the Economic Secretary to the Treasury, Reginald Maudling, to the Prime Minister, 13 Nov. 1953.
21. Ibid., Memorandum from the President of the Board of Trade, Peter Thorneycroft, to the Prime Minister, 13 Nov. 1953.

22. Bank of England, C 40/970, f.7, Memorandum to the Governor, 19 Nov. 1953.
23. Ibid., f.7, Letter from E.G. Compton, Treasury, to Sir Kenneth Peppiatt, 19 Nov. 1953.
24. Ibid., f.11, Memorandum from Sir Kenneth Peppiatt, Bank of England, to E.G. Compton, Treasury, 23 Nov. 1953.
25. Ibid., f.60, Deputy Governor's Note, 7 Dec. 1953.
26. Ibid., f.61, Deputy Governor's Note, 8 Dec. 1953; f.64, Memorandum of Chief Cashier to Governor, 9 Dec. 1953.
27. Ibid., f.65, Letter from John M. Wallace, Chase National Bank, to Governor, 10 Dec. 1953.
28. Ibid., f.75, Governor's Note, 11 Dec. 1953.
29. Ibid., f.84, Extract from Governor's Speech at Stock Exchange Lunch, 15 Dec. 1953.
30. *Financial Times*, 8 Dec. 1953.
31. Bank of England, C 40/970, f.84, Extract from Governor's Speech at Stock Exchange Lunch, 15 Dec. 1953.
32. Bull and Vice, *Bid For Power*, p.240.
33. See, for instance, Scouller, 'Merger Boom in Perspective', p.24.
34. Bull and Vice, *Bid For Power*, p.237.
35. Ibid.
36. D. Kynaston, 'A City at War with Itself', *Financial Times*, 7/8 Jan. 1989.
37. PRO, PREM 11/2020, Letter from the Chancellor of the Exchequer, Heathcote Amory, to the Prime Minister, Harold Macmillan, 2 Dec. 1958.
38. Ibid., Memorandum from the Economic Secretary to the Treasury to the Prime Minister, Harold Macmillan, 3 Jan. 1959.
39. Ibid.
40. PRO, PREM 11/2020, 'Note For The Record' of conversation between Harold Macmillan, Prime Minister, and Lord Portal, Chairman of the British Aluminium Company, 9 Jan. 1959.
41. Bank of England, C 40/971, f.10, Memorandum from Leslie O'Brien, Chief Cashier, to the Governor, 8 July 1959.
42. Clutterbuck & Devine, *Clore*, p.81.
43. Bank of England, C 40/970, Memorandum Leslie O'Brien to Governor, 1 June 1959.
44. *Financial Times*, 3 June 1959.
45. Clutterbuck and Devine, *Clore*, p.82; Gordon, *Two Tycoons*, p.53.
46. *Financial Times*, 23 June 1959.
47. 'The City and the Election', *Banker*, Vol.109 (1959) p.579.
48. *Financial Times*, 3 June 1959.
49. *Financial Times*, 7 July 1959.
50. Bank of England, C40/971, f.11, Note of Meeting at the Bank on Friday 10 July 1959.
51. British Merchant Bankers' Association, Issuing Houses Association Executive Committee Minutes, 17 July 1959.
52. Bank of England, C40/971, f.79, Minutes of Meeting, 15 Oct. 1959.
53. Ibid., f.71, Memorandum, Leslie O'Brien to Governor, 14 Oct. 1959.
54. Ibid., f.62, Governor's Note, 28 Sept. 1959.
55. D.E. Butler and R. Rose, *The British General Election of 1959* (1960), p.57.
56. Bank of England, C40/971, f.79, Minutes of Working Party, 15 Oct. 1959; *Economist*, 17 Oct. 1959.
57. *Economist*, 31 Oct. 1959; *The Times*, 31 Oct. 1959; *Financial Times*, 31 Oct. 1959.
58. British Merchant Bankers' Association, Issuing Houses Association Executive Committee Minutes, 20 Nov. 1959; 11 Dec. 1959.
59 D. Gooch, *Certified Accountant*, Vol.66 (1974), p.92.
60. Stamp and Marley, *Accounting Principles*, p.9.

61. For accounts of the origins of the Take-over Panel see M. Clarke, *Regulating The City: Competition, Scandal and Reform* (Milton Keynes, 1986), pp.105–7; Sir Alexander Johnston, *The City Take-over Code* (Oxford, 1980), pp.8–18; E. Stamp and C. Morley, *Accounting Principles and the City Code* (1970), pp.3–10.
62. Johnston, *City Take-over Code*, p.41.
63. See, M. Moran, 'Regulating Britain, Regulating America: Corporatism and the Securities Industry', in C. Crouch and R. Dore (eds.), *Corporatism and Accountability: Organised Interests in British Public Life* (Oxford, 1990), pp.103–124.
64. Bank of England, C40/971 f.88, Note For Record re British Chamber of Commerce, 20 Oct. 1959.
65. B.A.K. Rider, 'Self-regulation: The British Approach to Policing Conduct in the Securities Business, with Particular Reference to the Role of the City Panel on Take-overs and Mergers in the Regulation of Insider Trading', *Journal of Comparative Corporate Law and Securities Regulation*, Vol.1 (1978), p.319.
66. A.D. Chandler, 'Managerial Enterprise and Competitive Capabilities', op.cit.

BOOK REVIEWS

GEOFFREY TWEEDALE, *At the Sign of the Plough: Allen & Hanburys and the British Pharmaceutical Industry, 1715–1990* (London: John Murray, 1990. Pp.264: illustrations. £17.95).

The origins and early days of the business which became Allen & Hanburys – in the Quaker apothecary's shop established by Silvanus Bevan at Plough Court – are well-known from earlier and more hagiographical works. Dr Tweedale recounts them in a fresh and vivid fashion, setting the story of the extension of the apothecary's business into the manufacture of the galenical remedies of the time in the context of contemporary scientific research.

The firm, both as a partnership and after its incorporation as a private company in 1893, benefited greatly from its connection, established initially by marriage, with members of the Hanbury family who supplied a succession of able partners and directors. By no means the least of these was Cornelius Hanbury (1827–1916). Under his leadership the firm flourished, responding to the needs of an increasing and more affluent population, eager to use and able to afford the medicines then available. Allen & Hanburys opened factories, first at Bethnal Green and then at Ware, and overseas it also established branches and factories.

The expansion of the firm's product range into areas such as surgical instruments and hospital furniture, making it very much the 'universal provider' to the medical profession, took place in the decades both sides of the turn of the century. It was underpinned by what was then the most successful and profitable part of its business, the production of dried milk and baby foods.

Maintaining this extraordinarily diverse business would not have been easy in any conditions in the inter-war years, but the difficulties were compounded both by the effect of retailing changes and the emergence of new manufacturing methods and new competitors – particularly that of Glaxo in the dried milk and baby food business. Allen & Hanburys did however pioneer the production of insulin, but, like most other British pharmaceutical manufacturers of the period, it was unable to emulate the success with science-based pharmaceuticals that manufacturers in Germany and the USA were already achieving.

World War II saw the destruction of much of the Bethnal Green factory and the final demise of the Plough Court pharmacy. After the war, under the capable managing directorship of Cyril Maplethorpe, the firm moved out of galenicals and into modern ethical drug manufacture. Its loss-making overseas operations were rationalised, but in the 1950s its size and lack of resources made it vulnerable in a worldwide industry dominated by large, rich multinational corporations. In these circumstances the offer to become part of the fast-growing Glaxo Group in 1958, with the promise of a continued existence for Allen & Hanburys, provided a solution to some of the company's problems.

The last two chapters cover the major developments of the last 30 years, particularly the research which produced the commercially successful anti-asthma and anti-ulcer drugs whose contribution to the Glaxo Group's profits in the 1970s and the 1980s has been significant.

Dr Tweedale's book achieves more than the author's modest aim – to provide a readable and concise account of Allen & Hanburys' history. The illustrations are copious and apposite; the end papers are particularly delightful. Moreover the history is a significant addition to the literature of an industry whose size, importance and contribution to the UK economy is not yet reflected in published work. Allen & Hanburys' history adds to our knowledge of the way the pharmaceutical industry and the major players in it have developed and to our understanding of the process of change in British industry generally.

Business History Unit, London School of Economics JUDY SLINN

CLARK NARDINELLI, *Child Labour and the Industrial Revolution* (Bloomington, IN: Indiana University Press, 1990. Pp.x + 194. $25).

As Nardinelli observes, child labour, whether in the British Industrial Revolution or in late twentieth-century Third World industrialisers, is an emotive issue. Critics, in both the nineteenth and twentieth centuries, have deplored the conditions and hours of work endured by children past and present. The result, Nardinelli suggests, is a heady brew of subjective criticism. This, he argues, ignores the central economic issue: whether children and, by implication, their families were made better or worse off as a result of the Industrial Revolution. By providing an economic, rather than an emotional, perspective on child labour Nardinelli concludes that far from being exploited by the Industrial Revolution, children were liberated by it.

This interesting and provocative conclusion is explored in the fourth chapter. This chapter, previously published in *Research in Economic History*, provides the centre-piece of the book. In it Nardinelli outlines and develops an economic model which reflects decision making within the family economy. The technological changes which accompanied the Industrial Revolution, he argues, dramatically increased the productivity of children. This, he suggests, enhanced their contribution to the family budget and increased the standard of life of its members. Other chapters explore a range of issues associated with child labour. These include the scale of child employment in factories, the case against child labour and the impact of the Factory Acts. In the penultimate chapter, Nardinelli compares the legal control of juvenile work and conditions in nineteenth-century Britain with other industrialising countries. In the final chapter he casts a backward glance at child labour from a twentieth-century perspective, thus drawing his conclusions.

Historical economists *do* have much to offer business and economic historians. The judicious application of economic theory and quantitative methods has, over the last two decades, enlivened and enriched the study of both micro and macro issues in economic history. What is crucial, however, is that the practitioners have more than a passing awareness, not only of the period they are studying, but also of the wider historiography. What mars this book is not Nardinelli's attempt to reconstruct the family economy, nor his conclusion that children were not exploited by the industrial revolution. Rather, a potentially valuable piece of research is undermined by the limited array of primary sources used and the apparently scanty familiarity with the secondary literature. At best the impression created is of a good article stretched to produce a patchy book. At worst Nardinelli sometimes seems to be trying to reinvent the wheel.

There can be no doubt that Nardinelli's attempt to reconstruct the family economy in the British Industrial Revolution is novel. Yet in the first chapter he gives the impression that historians had been so diverted by emotion, in studying the experience of children, that they ignored the more mundane issue of the well-being of the family unit. Yet, the work of both Frances Collier and Ivy Pinchbeck, working in the 1920s and 1930s respectively, highlights this very issue. More recently Michael Anderson and many others have explicitly linked child labour and the family economy. What is even more curious, however, is that, having admonished historians for their omissions in Chapter I, Nardinelli outlines their findings on family economy in Chapter IV.

Nardinelli has paid remarkably little attention to the most recent historiography. Reference to K.D.M. Snell's *Annals of the Labouring Poor* (Cambridge, 1985) would have provided valuable insights into influences on the incomes of agricultural families in the eighteenth and nineteenth centuries. Similarly there is no reference at all to recent work by Maxine Berg with its emphasis on female and family labour. It is all too easy to find fault with the bibliographic base of a book, but these are major omissions rather than minor quibbles. There are also worrying deficiencies in the primary source base of this book. It is rather perplexing to find that a book entitled *Child Labour in the Industrial Revolution* relies so heavily on Factory Inspectors' Reports for the period from 1835 to 1874. At the same time, business records have not been used at all.

Sadly this book, the title of which promised so much, is a disappointment. The central thesis is interesting, but it is surrounded by little that is new. More seriously it lacks the firm foundation necessary for it to make any real impact on thought on child labour.

Lancaster University MARY B. ROSE

MICHAEL COLLINS, *Banks and Industrial Finance in Britain, 1800–1939* (London: Macmillan, Studies in Economic and Social History, 1991. Pp.107. £4.99).

Dissatisfaction with Britain's relative economic growth has generated interest in identifying the features of more successful economies that were absent from Britain. In the context of industrial finance this concern makes the role of banks difficult to ignore. Whilst German *Kreditbanken*, for example, assumed an active role in the strategic planning of industrial investment, it is widely believed that British banks supported their business customers on a comparatively limited scale, with predominantly short term funding. The nature of the debate, as characterised by Michael Collins, is whether banking practice frustrated industrial development – and therefore was at least partly culpable for British economic decline – or whether banks merely responded to the demands of industry, implying that financial needs were either satisfied from other sources, or were constrained by lack of productivity.

Collins surveys the principal hypotheses offered to explain bank 'failure', including Gerschenkron's 'early start' thesis, Elbaum and Lazonick's notion of institutional rigidities impeding change, and the view that socio-political factors promoted an independence of financial and industrial interests, which inhibited necessary coordination regarding investment decisions. These theories are then examined in more detail with reference to empirical studies of banking development prior to 1870, in the period 1870–1914 and in the inter-war years.

Throughout the book Collins clearly places his survey of banking policy in the context of the debate on capital market efficiency, reviewing the work of Edelstein, Kennedy, and Michie with particular reference to the 1870–1914 period. He also pursues the notion that a sustained commitment to free trade, the gold standard, and to the anti-inflationary monetary policy that 'sound finance' implied, had deleterious consequences for industry. In particular the problems which faced industry following the 1925 return to gold at the pre-war parity are discussed in some detail.

This study offers a comprehensive survey of a debate that is likely to assume increasing importance in the future. An additional aspect which might have been usefully considered is a brief survey of more recent studies of German banking, such as that by Neuberger and Stokes and by Richard Tilly. By presenting evidence that the German equivalent of a 'Macmillan Gap' could have existed at least prior to the First World War, their work offers some indication that German banks may not have been as successful as the Gerschenkron view suggests. This claim is particularly interesting given Collins' observation that the bank failure debate is partly prompted by international contrasts in bankers' attitudes to industry.

There is much to recommend to business historians in this slim volume. Collins presents a clear survey of a debate which has implications for anyone interested in industrial finance at either the business or the aggregate level. One of the recurring themes of this book is that many of the arguments forming the framework of this debate are not substantiated by adequate documentary research. In successfully drawing attention to this neglected area, Collins also manages to leave his readers with a challenge.

University of York KATHERINE WATSON

SARAH PALMER, *Politics, Shipping and the Repeal of the Navigation Laws* (Manchester: Manchester University Press, 1990. Pp.x+209. £29.95).

The repeal of the Navigation Laws has always played a secondary role to the repeal of the Corn Laws in histories of Britain's commercial policy. Dr Palmer has set out to redress the balance. Her two basic aims are first to examine the political aspects and secondly to assess the economic repercussions.

The Laws had been built up over a period of some two hundred years and were extremely complex. They shaped the nature of both the shipping and the shipbuilding industries which were important elements in Britain's economy. Even so, the main arguments in favour of protection were political. They were concerned with the need to provide a flourishing mercantile marine to ensure a supply of sailors for defence in time of war. In the 1840s the shipping interests generally wanted some measure of protection, though many would have preferred fewer restrictions on their own activities, but the key argument for protection was the need for a 'nursery' for seamen for defence purposes. The main body of the book is therefore concentrated on the political rather than on the economic arguments. In fact, Dr Palmer devotes several chapters to a very detailed account of the political debates year by year throughout the

1840s. There were deep political divisions, and even the shipping interests were divided, but, on balance, there was more support for protection than for repeal. Nonetheless, despite the fact that nobody could accurately forecast what the outcome of repeal might be, it was eventually approved by Parliament to take effect in January 1850.

Throughout the 1850s there were further debates about some of the matters that had not been dealt with in the repeal and there was also a good deal of discussion (though no action) about retaliation against those countries who failed to offer reciprocal concessions. The economic consequences were, however, far from clear. In the short term the confidence of shipowners and shipbuilders was affected and foreign competition certainly increased but British shipping benefited from new demands such as gold discoveries, the Crimean War and increased emigration. In the longer term both shipping and shipbuilding expanded and flourished but Dr Palmer is uncertain how far this was due to repeal. In particular she criticises those who, with hindsight, claim that Britain's move away from protection for shipping was due to confidence that steam technology would in any event give her the competitive edge over other countries. She categorically denies any historical basis for such a direct linkage on the grounds that there was a clear distinction at this time between sail and steam and British shipping interests were not yet committed to steam. On the other hand, she herself is unable to reach any definite conclusions about the long term results of repeal, claiming that it is impossible to measure them and to isolate them from other unrelated factors.

Dr Palmer has drawn on a wide range of sources which are detailed in her bibliography. She has used collections of political and shipping manuscripts, a great many official publications (particularly of a political nature), newspapers and secondary sources.

The book is well-written and draws attention to some hitherto neglected aspects of the development of Britain's commercial policy in the nineteenth century. Many readers might, however, find the political arguments somewhat tedious. Furthermore, the relegation of the economic aspects to a secondary position tends to reduce the attraction of the book to business historians although those concerned with nineteenth-century shipping and shipbuilding could find some background information and might perhaps be stimulated themselves to consider further the economic and commercial implications of repeal.

University of Liverpool SHEILA MARRINER

PENNY SUMMERFIELD and ERIC J EVANS (eds.), *Technical Education and the State since 1850: Historical and Contemporary Perspectives* (Manchester and New York: Manchester University Press, 1990. Pp.ix + 223. £29.95).

This book deals with the causes of the poor quality of technical education in the United Kingdom since the late nineteenth century. It does not attempt to deal with the effects of inadequate technical education on the performance of the manufacturing sector. I do not regard this as an omission, since there is no shortage of views on the latter topic.

Three essays stand out as particularly important in this volume. In a trenchant attack on the policies of Sir Robert Morant in the early 1900s, Meriel Vlaeminke argues that the Board of Education deliberately suppressed technical education in local authority schools. Vlaeminke shows that the Higher Grade schools of the 1890s offered a curriculum in which scientific and practical subjects were given prominence, not just in the education of boys, but also of girls. But Sir Robert Morant and his Oxbridge-educated inspectors redirected resources towards the classically oriented grammar schools in the 1900s. Council-run Higher Grade schools were starved of government grants and some were forced to close, such as that at Walsall in 1905. Morant's view was that access to education should be restricted to the middle classes and a very small minority of the deserving poor, and that it should not dwell upon peripheral subjects such as engineering. If Vlaeminke is to be believed, this is where the British system went wrong. Her chapter gives convincing empirical support to the unpopular Wiener thesis.

Sarah King examines technical education in London's 'central' schools between the wars. The central schools were similar to the pre-1914 Higher Grade schools in their emphasis on practical and technical education. They too encountered the disdain of the national government. There was one crucial difference. Unlike the Higher Grade schools, the central schools segregated boys and girls. The girls were denied engineering education and had to concentrate on typing, shorthand, cooking and needlework. This was a step in the wrong direction.

Martin Davis criticises British policy towards the higher levels of technical education between 1944 and 1956. Although by now the government had accepted that there were real deficiencies in this area, it proved impossible to persuade all the vested interests to adopt a coherent strategy. The universities were afraid that the granting of technological degrees would devalue their own products. The professional bodies, such as the civil engineers, were anxious lest the government establish rival organisations. It was a disgraceful and embarrassing performance by all concerned.

This is a significant book and deserves careful study. Although in general it confirms the Wiener thesis it adds three important caveats. First, it appears that local governments were keen to support technical education but they could not withstand the intimidation of the Board of Education. Second, girls received progressively less technical education during the twentieth century. Third, the jealousy and pride of the professional bodies hampered the development of technical education after 1945.

London School of Economics JOHN SINGLETON

BRUCE COLLINS and KEITH ROBBINS (eds.), *British Culture and Economic Decline* (London: Weidenfeld & Nicholson, 1990. Pp.x+208; Paperback £6.99p.).

Almost a decade after the first edition of Martin Wiener's *English Culture and the Decline of the Industrial Spirit*, the five essays assembled here critically re-assess the 'Wiener thesis', and its partial amplification in Corelli Barnett's *The Audit of War* (1986). For the most part they share in common a rejection of the thesis in detail while all are reluctant to dismiss the case for the cultural origins of Britain's relative economic decline. Keith Robbins elegantly sets out the issues in an introductory chapter, although in a collection of this kind there might be equal value in a conclusion, pulling together the diverse strands of some wide-ranging essays. Peter Payne offers a survey of British entrepreneurship since the Industrial Revolution, covering ground which will be largely familiar to readers of this journal. W.D. Rubinstein, although starting out from his usual analysis of wealth-holding, broaches some more interesting ideas concerning tariffs and British decline. This essay mixes sense and insouciance with its disarming disclaimer of having re-read the relevant historical literature. However, the real promise of novelty in this volume lies in its two comparative essays, for implicit in the Wiener thesis has been the assumption that British culture was significantly different from that of more economically successful nations, especially Germany and the United States. This assumption Harold James roundly dismisses as the myth of British cultural exceptionalism and in the best essay of the collection, clearly argues for the essential comparability of German and British attitudes with regard to education, literary culture and social behaviour. The only surprise is perhaps that some historians may ever have believed that Junker-dominated Germany was culturally more favourable to economic growth than late Victorian Britain. Finally, Bruce Collins in an overlong chapter suggests a number of reasons for American resilience as the world's leading economy now facing a decline comparable to that of Britain. However, it must be said that this essay uneasily combines a survey of the recent American economy with sweeping cultural arguments to explain why American society since the early nineteenth century has been more favourable to entreprise, without showing how such factors account for recent resilience. Awkwardly, too, Collins operates within assumptions about British culture which the other essays, especially that of James, have decisively undermined.

It will be clear that this a very mixed bag. Certainly, the editorial intention – of allowing the reader to be able to make up his own mind as to the cultural reasons for British decline – seems utopian, especially when the five authors gathered together cannot agree on when that decline set in. Even more seriously 'British culture' is an immense topic. It may indeed contain important clues to economic decline – but is 'British culture' really to be reduced to public school education, anti-capitalist ideas in literature, and gentrified social behaviour? The most disappointing aspect of this volume is the failure to define or discuss the cultural setting of British enterprise. Two aspects of this call out for further attention: at the level of political culture, a clear understanding of the part played by the entrepreneur in the British state, especially with regard to economic ideologies; and secondly, greater awareness of patterns of philanthropic and cultural endeavour among businessmen, a study which is now beginning in earnest. This book is therefore too premature to achieve the leap beyond familiar criticisms of the Wiener thesis towards a satisfactory analysis of the part played by culture, a protean concept if ever there was one, in British economic decline.

London School of Economics A.C. HOWE

DAVID J. JEREMY, *Capitalists and Christians: Business Leaders and the Churches in Britain, 1900–1960* (Oxford: Clarendon Press, 1990. Pp.xviii + 491, £45.00).

The role of religion in modern industrial society is a seriously under-researched subject, not least from the perspective of British business history. It is true that some attention has been devoted to the role of religious nonconformity as an aspect of entrepreneurship in the eighteenth and nineteenth centuries, but an all-embracing study with full temporal and thematic coverage is notable for its absence. The difficulties of writing in this area are, of course, immense. It is one thing to identify religious conviction at the individual level. It is quite another to demonstrate that religious beliefs pervaded personal behaviour especially when, in the sphere of business, the desire to do good works can be attributed equally to motives of social control or simple decency. Even where businessmen engaged in overt demonstrations of religious commitment, in building churches for example, and in endowing religious causes, lack of written testimony may well preclude assessment of genuine religious motives. There can be few business historians more fitted to begin the task of illumination in this difficult field of historical enquiry than Dr Jeremy. His interest in the subject has already been signalled in his existing volume *Business and Religion in Britain* and as editor of the multi-volume *Dictionary of Business Biography* he possesses an unrivalled knowledge of the personal attributes of Britain's entrepreneurial leaders in the late nineteenth and twentieth centuries. His latest study sets out to address two critical issues, first the role of religion in British business in the twentieth century, and secondly the extent to which business values were infused with Christian beliefs. The analysis is based upon three samples of the business elite in 1907, 1935 and 1955, a time which encompasses major developments both in terms of religious commitment in the wider society as secularisation proceeded apace, and in business structure as the family firm receded in importance in the face of corporate professionalism. Dr Jeremy's findings are at the same time predictable and surprising. Overwhelmingly, the heads of the largest firms were middle-class: 50 per cent of all chairmen and managing directors possessed public school backgrounds. In 1907 more than half of the former and a third of the latter displayed definite Christian preferences, proportions which had fallen to less than a third and a quarter respectively by 1955. These figures conform to the general trend of secularisation but they also reveal that throughout the period business leaders remained markedly more Christian than the population as a whole. Before 1914 about 10 per cent of firms were involved in overtly religious activities *vis à vis* their workforce, a practice exemplified by William Lever's role at Port Sunlight where the elaborate Christ Church was built as an integral part of the company's structure. Over time the rise of corporate enterprise severely limited the opportunities for such endeavours but, as Dr Jeremy shows, the long persistence of personal capitalism ensured that a distinctly Christian ethos would survive in British business. Outstanding in this respect was the engineering firm of Rubery Owen which recruited industrial chaplains after 1945 to engage in Christian dialogue with employees. More generally, Dr Jeremy points to the long persistence of Christian debating groups, from the decennial conferences of Quaker employers launched in 1918 to the Christian Frontier Council which drew academics and politicians into a dialogue with business leaders as to the means of sustaining Christian principles in business and commerce. Throughout the period, moreover, businessmen were actively involved in ecclesiastical administration, lending their expertise for fund raising to support missionary and evangelical activities, and property transfers. Dr Jeremy has written a scholarly study of the relationship between Christianity and business practice. His attention to fine detail in the search for primary sources has been indefatigable and there can be little doubt that his work will prove definitive. In its later stages *Capitalists and Christians* is hardly a rivetting read but in terms of the range of issues addressed and its use of source materials it highlights the gross deficiencies in our knowledge of the interplay between religious values and business practice in the formative years of British entrepreneurship before 1900.

University of Lancaster MAURICE KIRBY

MICHAEL KITSON and SOLOMOS SOLOMOU, *Protectionism and Economic Revival: The British Interwar Economy* (Cambridge: Cambridge University Press, 1990. Pp.xi + 123. £22.50).

In 1931, after nearly a century in which Britain had been the principal exponent of the free trade doctrine, a combination of sectional interests and special economic and political circumstances brought about the imposition of a general tariff. However, this momentous policy change was only one part of a fundamental reorientation of British economic policy which occurred between September 1931, the abandonment of the gold standard, and June 1932, the War Loan conversion operation which heralded the cheap money policy. The coincidence of changes in exchange rate, trade and monetary policies within such a short period has always created a problem for the analysis of the underlying motives and impact of public policy at this time. However, the tariff poses particular problems because analyses of the effects of protection in a flexible exchange rate regime have generated conflicting results in the international trade theory literature. Moreover, the difficulty of discerning individual policy impacts, more particularly the isolation of the effects of the tariff from the devaluation in explaining the large fall in the manufacturing sector's import propensity after 1931, is compounded by our knowledge that import propensities fell in many sectors which were not directly affected by trade policy.

This new study of an old problem is, therefore, to be welcomed. Hitherto, economic historians have broadly concluded that the tariff was far more successful in serving political objectives than in promoting economic recovery. Kitson and Solomou disagree. For them the tariff lies at the heart of the improvement in economic performance after 1931. This is interpreted not just as a trade cycle recovery but as a traverse to a higher growth path in which, for the first time in fifty years, Britain started closing the technology gap with the US.

The argument is conducted in terms of both macro and microeconomics. In the former, they demonstrate that import competitiveness improved more than that of export competitiveness, evidence of the devaluation's secondary importance, and that tariffs were the most important variable in explaining the changing shares of imports from the different trading blocs. In the latter, they disaggregate the industrial structure to show that the effect of protection was most favourable to scale intensive and labour intensive industries, the very industries which, of course, were predominant in the 1930s.

For the authors the impact of tariffs in inter-war Britain indicates that universal adherence to free trade may not always be appropriate to an industrialised economy in disequilibrium, a result consistent with much of recent trade theory literature which stresses a positive role for protection under conditions of oligopoly and imperfect competition. They do, however, point out that their conclusions do not imply that tariffs generated an industrial structure that was beneficial to economic growth after the Second World War. In a broader sense, this is the conclusion that is gradually emerging about Britain in the 1930s: that government policies were favourable to short-term recovery, but by inhibiting competition and creating new distributional coalitions they more firmly established structural imbalances and resource patterns which constrained longer run economic growth. The microeconomics of this require much more investigation; and it is to be hoped that business historians will in the future devote more attention to studying supply responses to macroeconomic policy changes at the industrial level.

University of Bristol ROGER MIDDLETON

JOHN HENDRY, *Innovating for Failure: Government Policy and the Early British Computer Industry*. (Cambridge, MA: MIT Press, 1990. Pp.xviii + 240. £31.50).

For nearly a century it has been widely held that the British economy has performed inadequately; that its performance could be improved; and, that steps should be taken to ensure that it did. Suggested remedial policies range from advocations of wholesale intervention by the state to exhortations that all should be left to the market. Somewhere along this spectrum can be located agencies of the state created by Labour Governments to influence the private sector, including: the Ministry of Technology, the Industrial Reorganisation Corporation and the National Enterprise Board. All attempted to foster change in industry and, in particular, encourage the adoption of scientific methods and new technology.

The major innovation revealed by John Hendry in this study of the relationship between state and industry is the National Research Development Corporation. The NRDC was established by the 1948 Development of Inventions Act to manage patents and sponsor the exploitation of inventions produced by public sector research. Additionally, it was to act in the public interest by the acquisition and administration of privately developed patents and to develop otherwise neglected inventions. A relatively small budget was funded by a five-year loan after which the NRDC was to be self-financing. Its restricted terms of reference rendered it politically uncontroversial; these were extended to include sponsorship of research by a second Act of 1954.

When Harold Wilson appointed Lord Halsbury, a hereditary peer, as managing director the corporation acquired a qualified chartered accountant with a science degree and varied industrial research experience as its leader. Halsbury quickly decided that computers would be important in the post-war world and one of his major preoccupations became the encouragement of firms which had the potential to become British manufacturers of computers. His principal difficulty was persuading British companies that this conception of the future was realistic.

In 1949 computer technology was on the point of being transformed from a theoretical possibility into practical reality. The pioneering work in this field undertaken in the United States and Britain indicated little sign of an obvious American lead. England, after all, was the location of the world's first fully operational computer at the University of Cambridge. Only a decade later American-produced machines dominated the world market and only five more years were required to achieve predominance within Britain.

Companies engaged in the development and manufacture of computers in the United States had clear advantages including the size of the domestic market, the subventions of government and the scale of defence spending. There were other factors, as Hendry demonstrates. For example, the beneficial movement of enterprising researchers between a variety of private and public research institutions, including military establishments, and the commercial producers of computers did not occur in the UK.

There is a conviction at the heart of this book that key players within British companies never shared Halsbury's convictions. By 1954 Halsbury clearly recognised IBM's challenge but remained unable to foster an effective British response. Despite significant funding by the NRDC EMI's entry into the industry floundered. After a decade of 'trying to push mules up hill' Halsbury retired and the NRDC terminated its attempts to influence the computer industry. Perversely, the mules now moved. Recognition of the American challenge prompted belated reorganisation, before the return of the Wilson government in 1964, along lines similar to those which had been advocated consistently by Halsbury.

By way of a summary Hendry offers generalisations prompted by the NRDC experiences which highlight some ambiguities of government sponsorship. Can developments be sponsored without unfairly favouring the recipient? Is effective monitoring and control possible? How are the motivations and objectives of sponsor and the sponsored to be assessed? Finally, an Appendix presents tables indicating the membership and finances of the NRDC, the sales of British computers and British purchases of computers between 1949 and 1969. It also provides brief but useful histories of computer manufacturing companies.

Bristol Polytechnic PETER WARDLEY

JAMES D. TRACY (ed.), *The Rise of Merchant Empires: Long-Distance Trade in the Early Modern World, 1350–1750* (Cambridge: Cambridge University Press, 1990. Pp.ix + 442; maps. £35).

The Centre for Early Modern History at the University of Minnesota is to be congratulated on assembling a group of distinguished scholars in 1987 to discuss the development of international trade, largely in the period before 1750. The resulting volume offers a truly exotic diet. Barely any part of the world has been ignored: if we take only the letter 'C' from the index we find that it ranges from Cadiz to Calcutta, Cairo to Cambodia, Canton to Chios, and Cologne to the Coromandel Coast. There are substantial surveys of the trade and shipping of the major agents of European expansion – Spain, Portugal, England, France and the Dutch – and the impact of their development on the existing patterns of trade outside Europe, and especially on the caravan routes across the Sahara and from the Middle East to China. The answers are not always as expected. In his discussion of the central Asian caravan trade, Morris Rossabi accepts the conventional wisdom that decline was caused by increasing competition from European ocean going vessels, but only up to a point: he also insists that decline was intimately related both to political disruption and to religious and social changes taking place within Asia itself. In addition to the broad surveys there are detailed discussions of particular aspects of trade and shipping, and readers of this journal will be particularly interested in the essays by Larry Neal, who assesses the relative success of the English and Dutch East India Companies by comparing the movement of their share prices, and by Jaap Bruijn who explores the economics of Dutch shipowning. Due to the paucity of records elsewhere in the world the story is often told from the European angle, although the 14 contributors to the volume are fully aware that, until a relatively late date, non-European trade networks could be more extensive, and, perhaps, more sophisticated: Irfan Habib's fascinating discussion of merchant communities in pre-colonial India opens with the observation that in 1600 India's population was between 125 and 150 million, with a trade network which was correspondingly impressive. Like the product of any worthwhile academic conference, this volume contains both important retrospective surveys and an agenda for future research: in the former category is the review of recent work on the Atlantic slave trade by Herbert Klein, while the essay by Wang Gungwu on migrant Chinese merchant communities hints at riches to come as historians begin to probe less frequented areas. This is an important book, a significant staging-post in the historiography of world integration, but it is likely to sell more freely on the other side of the Atlantic than in Britain. The relatively low American price of $44.50 should give the book a better chance than in Britain where scholars on lower salaries are being asked to pay £35. Perhaps more British academics should contemplate the advantages of a combined holiday and book-buying expedition to the States.

University of Hull DONALD WOODWARD

G. COCKS and K.H JARAUSCH (eds.), *German Professions, 1800–1950* (Oxford: Oxford University Press, 1990. ix + 340 pp.£40).

This collection of 16 essays makes a major contribution to the increasingly popular field of professionalisation history. The contributions are, fittingly, professional enough, drawing on a wide range of primary and secondary evidence from a diverse number of professions. The book is designed to show how self-conscious professions are created and develop, and secondly what was distinctive about this process in Germany. If there is a common theme here it lies in the view that professionalisation was encouraged in Germany not by consumer demand or traditions of self-organisation but by a shared educational background and the influence of the German state. Professions developed more as a result of structures dictated by academic qualification and bureaucratic practice, than through the pressures of the market place.

The book covers a wide range of professions, from classical scholars and attorneys in the nineteenth century to psychologists and engineers in the twentieth. The early period shows how closely any idea of a profession as such was tied to a specific academic attainment, and how jealously such qualifications were guarded. It also shows how the state in Germany, because of the traditions of employing expertise and assuming wide responsibilities in organising public affairs, created the circumstances in which doctors or lawyers or engineers came to see themselves as sharing common interests. Sometimes the effect of the state was negative, encouraging a professional identity in order to transcend the limitations of state dependence. In the case of engineers and chemists, many of whom relied on training and qualification granted by the state, and who were employed by state authorities, there developed a competitive professionalisation as less academically qualified private-sector scientists and technologists challenged their monopoly of knowledge and jobs.

The idea that professionalisation was a product of status-anxiety and a corporate defence of jobs and expertise is evident in a number of the contributions, particularly Jill Stephenson's study of women and the professions. Male fears of female competition at a time when society was busy churning out too many qualified men explains why women were only admitted to higher education in 1900, or to the legal profession in 1922. It also helps to explain why Nazi ideas about the place of women in society were so heartily endorsed by educated Germans in the 1930s. Indeed the receptiveness of the German professions to the appeal of Nazism is another recurrent theme here. The chapter by Kees Gipsen on German engineers shows how the growth of a large engineering class anxious about jobs, divided between academic engineers and less-qualified practitioners, increasingly hostile to the entrepreneurial elite, became attracted to radical right-wing politics because it valued expertise above profits. Support for Nazism in some ways freed professionals from dependence for their identity on a state whose republican, social-democratic profile they disliked.

There is little to quarrel with in all this. German professional bodies seem on the whole to have grown more hesitantly than their western counterparts, to have been more fractious and to have been less concerned with the needs and economic influence of their clients. This is something of a paradox for a country which, even in the mid-nineteenth century, had something of a reputation for the professional quality of its administration, schooling and science. Though the history of professions does not make for easy reading, it is the strength of this book of essays that it goes a long way towards explaining this paradox.

King's College, London R.J. OVERY

SIMON REICH, *The Fruits of Fascism: Postwar Prosperity in Historical Perspective* (Ithaca, NY: Cornell University Press, 1990. Ppxii + 341; Cloth $46.50, Pb. $15.95).

Formally this is a study of the (mainly) post-war history of four motor car producers, two British and two German. But, as is the way with such studies, the conclusions drawn are, despite numerous disclaimers, applied to the whole of the motor industry and even to the whole of the respective economies, thus offering an explanation of British post-war failure and German success.

Briefly, the explanation for this contrast is that Germany flourished because her post-war government, following closely the pattern of the Fascist state, favoured its 'core firm', while the British failed, because, sticking to their liberal tradition, they scattered their State support indiscriminately and fairly among all makers, including the American firms Ford and Vauxhall.

Most theories grossed up from case studies tend to fit their researched base quite well but appear more and more forced when applied in widening circles elsewhere. This one is distinguished by the fact that it does not fit even the selected case studies. Granted that VW flourished because it received favours from the State and that Austin and its successors failed because it received no special favours. When we come to Fordwerke (Germany) we are in some difficulty: It is portrayed as a failure as it was harassed by the German state, but the feat of considering it a failure is achieved only by finishing its history, alone among the four, in 1960. It is Ford of Great Britain, however, the fourth firm studied, which poses the greatest problems: possibly that is why it is not made clear if it is meant to be a failure or success. If a success, how can this be squared with the fact that it received no special government support? And how can that explain Britain's general failure? But if Ford (GB) was a failure, we have three failures against only one success (VW) and the question must arise whether there were other reasons for the unique achievement of VW. Might it perhaps have won on quality and service? No, not possible says Reich, for the Beetle, 'though reliable, was uncomfortable and ill-designed' (p.138): 17 million customers, it appears, *can* be wrong. The successes of the other German makers, including Daimler–Benz and (American) Opel as well as Ford have no explanation at all in these pages.

The Procrustean bed of the theory presented here requires even more painful operations on reality when applied outside these four firms. French success, it appears, derives from keeping out American firms and cosseting Renault, following the Fascist (Vichy) tradition. The author clearly thinks that Renault is the success, and Peugeot, Citroen and Simca are failures. Italy and Japan likewise did well by continuing the favouritism of their Fascist years. The USA, by contrast, has seen its motor industry in relative decline because the Federal Government had no favourites among the native companies.

There is no attempt made to compare costs, efficiency, sales and service methods. Nor is there any hint of possible mechanisms by which Government favourism could help to capture world markets, except for the biased allocation of scarce materials in the very early post-war years. Neither are the reasons for the growing and complex specialisation policies for particular countries on the part of the larger multinational companies followed through.

There may be something to be said for re-examining the survivals of Fascist economic policies in the countries concerned, but the continuities of VW or of the Japanese makers after defeat, destruction and economic collapse are exaggerated beyond reason in these pages. Also, the author might have spared a thought for other, widely accepted theories for British failures, or German successes, and explained why he found them inadequate. His own arguments seem to this reviewer to be wholly unconvincing.

There is no bibliography, not even a list of the archival material used.

Sheffield SIDNEY POLLARD

LEIGH HANCHER, *Regulating for Competition: Government, Law and the Pharmaceutical Industry in the United Kingdom and France* (Oxford: Clarendon Press, 1990. Pp.429. £45.00).

This is the most recent volume in the series on government–industry relations edited by Maurice Wright and Stephen Wilks. In it Leigh Hancher develops themes proposed in a previous book in the series, *Capitalism, Culture and Economic Regulation*, aiming at a comparative, cross-national approach to the regulatory process, freed from the stamp of American scholarship and from the language of 'capture'.

As part of this project, Leigh Hancher's recent contribution successfully distinguishes important features of British and French traditions of economic regulation. She demonstrates that both countries have evolved a culture of regulation in regard to their pharmaceutical industries, albeit on a voluntaristic and non-legal basis. Both British and French governments have co-opted their pharmaceutical industries into the regulatory process, but neither side has remained always dominant. Regulation has taken the form of negotiation, bargaining and 'interest intermediation', both under the informal British system which relies on industry's own self-regulation, and under the formal but fragmented powers of the French system. Leigh Hancher thus finds the concept of 'capture' inadequate and static.

Leigh Hancher places the British and French governments' regulation of their respective pharmaceutical industries in the context of national legal traditions, of national systems of health care and insurance, and of different market structures. Her book spans 40 years and a wide variety of forms of regulation. Proceeding partly thematically and partly chronologically, she covers price and profit control, product safety and licensing, the impact of European law, attempts in the 1980's to reduce health expenditures and the regulation of advertising of branded products. She also looks at the use of general anti-trust laws in each country to regulate pharmaceuticals, and the period in the 1980s when 25 per cent of the assets of the French industry were in state hands.

Viewed, however, in terms of the promise of the title and the introductory chapter, I found the book less satisfactory. The book promises to examine the impact of regulation on competitive processes, but there is no systematic study of price behaviour and profits, while the industry in each country is subsumed under the representative trade association and the reader has little feel of changes in relationships between firms. Secondly, the book hinges on the assumption that governments have aimed at securing 'effective competition' as well as health objectives. Currently regulation has certainly become almost synonymous with competition policy, but in France, Leigh Hancher asserts, low prices, not competition *per se*, were the object of price control. In Britain product-licensing was in fact proposed by the Association of the British Pharmaceutical Industry and is a well-known method of erecting barriers to entry, and little or nothing has been done to prevent patent law being used to suppress competition.

In spite of these problems, this book is a vital addition to our knowledge and understanding of national styles of regulation. Business historians will find it particularly useful as a study of how the law and regulation impinges on business strategies.

University of Leeds HELEN MERCER

GERT FISCHER, *Wirtschaftliche Strukturen am Vorabend der Industrialisierung: Der Regierungsbezirk Trier, 1820–1850* (Cologne: Böhlau Verlag, 1990. Pp.xliv + 504; maps. DM148).

In 1973 Helmut Hahn, Wolfgang Zorn and collaborators published economic maps for the Rhineland (*Historische Wirtschaftskarte*) for the year 1820. This very large undertaking, still unsurpassed in German historiography, provided a detailed picture of the economic geography of the region.

Gert Fischer builds upon this work, focusing on the government district of Trier. Starting from the situation described in the *Historische Wirtschaftskarte*, his intention is to provide a more detailed account and also to plot change over time. His end-date is 1850, when the area was still clearly pre-industrial. Fischer's methodological aim is to show how, using contemporary topographies and government records from what was still a 'pre-statistical age' (p.491), it is possible to reconstruct in detail the economic activity of a region.

He first describes how most of the area came into Prussian control at the Congress of Vienna. The district of Trier included the wine-growing area of the Moselle valley and the coal and iron working areas of the Saar in the south, as well as some very poor hilly regions, especially in the north. Under Napoleon the area had been a part of France, able to trade westwards. The relatively free-trade policies pursued by Prussia, especially with the establishment of the German Customs Union in 1834, coupled with the pursuit of more protectionist policies by other countries, especially France, forced the region to look towards German markets.

Nevertheless, Fischer shows how backward this region was measured by commercial or industrial criteria. Communications and transport were poor, especially in a north–south direction and particularly for the hillier northern areas. Agriculture dominated throughout the region. The bulk of the book provides a detailed account of the various kinds of agriculture. In the southern regions there was more diversity – with some commercial vegetable, fruit, hop and tobacco cultivation. Especially important was the wine growing of the Moselle valley. There was less in the way of potato cultivation or production of the poorer grains such as rye and oats as was to be found further north. This was due to better soils and communications, and to the development of more industrial areas, in which the coal and iron of the Saar and Saarbrücken regions were most prominent, which needed to import food.

However, the region as a whole was still very largely one of subsistence agriculture. Fischer demonstrates this by going on to consider in detail the crisis of the 1840s, showing that this was a crisis not merely of low production but also limited market opportunities and profits. He postulates a mix between subsistence and commercial farming (even the poorest regions had to earn some money for such purchases as salt and to pay taxes) which inhibited structural change. Instead, hard times led to more seasonal work outside a region or an intensification of various by-occupations – crafts, tanning, transportation, etc.

Fischer moves on to consider these by-occupations, especially tanning, stone working, and iron-working. There were areas of modernisation, especially in the field of iron-working and coal-mining, but agriculture remained dominant and industrial or craft activities were more often than not subsidiary sources of income rather than full-time occupations. The book finishes with detailed accounts of two small areas – a largely agrarian one and one which mixed agriculture with industrial and craft activity – which confirm much of the preceding argument.

The book is based upon archives for the government district and its various administrative subdivisions. The text is supported by numerous maps and tables in which information on harvests, occupational breakdowns, level of mortgage debt, and much else are provided. Fischer does not seek to move beyond the level of description but at that level this is a well-organised, clearly presented, and definitive account.

University of Manchester J.J. BREUILLY

MARY A. DE CREDICO, *Patriotism for Profit: Georgia's Urban Entrepreneurs* (Chapel Hill, NC, and London: University of North Carolina Press, 1990. Pp.xx + 211; illus.; maps. $29.95).

The traditional view of the pre-Civil War South is that the planter elite had created social barriers to the industrial diversification of the South's economy, thus perpetuating a 'pre-bourgeois' society. DeCredico suggests that this view has only been challenged recently with local studies which provide evidence that an urban industrial middle class not only existed, but actively pursued the twin goals of industrial growth and diversification. However, these studies conclude on the eve of the Civil War. DeCredico's study goes one step further in challenging the conventional wisdom by looking at the experience of mobilising for the Civil War in the South and the way that mobilisation affected the dynamics of Southern society. More specifically she explores Georgia's response to the demands of the Southern mobilisation to show how the war and the immediate post-Civil War period influenced entrepreneurs in four of Georgia's urban centres: Atlanta, Augusta, Columbus and Savannah.

DeCredico argues that there was a thriving urban enterprise culture in Civil War Georgia, even though 90 per cent of the population was rural. Her research suggests that Georgia lived up to its reputation as the 'Empire State', that is to say New York, of the South. DeCredico shows how Georgian industrialists and railway owners met the challenge of the Southern war effort. She argues that statements by historians and contemporaries may exaggerate the bias against manufacturing in the South during the Civil War period, the extent to which manufacturers were seen as profiteers, and the degree to which Northern-style entrepreneurship was retarded. DeCredico finds that both the manufacturers and the railway owners made a very important contribution to the Southern war effort. She also suggests that these entrepreneurs made a surprisingly quick recovery after the defeat of the South in 1865.

DeCredico's research has provided local evidence which supports a traditional view that the economic impact of the Civil War on the South hit agriculture harder than it did manufacturing, and that this encouraged the civilian population to shift their capital out of agriculture and into manufacturing. Her research also supports the view that Southern manufacturing and railways recovered rapidly in the immediate post-Civil War period, unlike agriculture. However, DeCredico argues against the traditional view that the Southern planters were a hostile hegemonic elite. She believes Georgia's planters had worked enthusiastically together with merchants and traders to encourage industrial expansion throughout most of the pre-Civil War period. So it is surprising that she says very little about the interaction of the planters with the businessmen during the war.

Nonetheless, DeCredico provides a valuable and intimate portrait of Georgia's urban manufacturing sector and state-wide railways. It is a very accessible study based on a wide variety of sources, including business and government archives. As a study of Georgia's urban manufacturers and railway corporations during the decade 1860 to 1870, this is an important contribution to the business history of the American South. It also will help to further understanding of the economic and business dimension of the South's war mobilisation, its defeat, and immediate post-Civil War recovery.

Wolverhampton Polytechnic RICHARD A HAWKINS

OLIVIER ZUNZ, *Making America Corporate, 1870–1920* (Chicago, MI: University of Chicago Press, 1990. Pp.267; illus.; £19.95).

Olivier Zunz has identified a gap in the historiography of the American corporation. On one hand, there are the traditional histories of controlling elites, modified somewhat by the more structural Chandlerian school. On the other hand, social and labour historians have mapped out the terrain of the shop floor. These two, largely exclusionary, approaches have failed to provide an account of the strata in between – what is usually very generally termed the 'white collar' worker. We do have the work of sociologists, notably C. Wright-Mills. The trouble is, Mills hates white-collar man (p.3). Zunz, in contrast, thinks he deserves a more favourable appraisal. Especially so, since he sets out to demonstrate that white-collar workers were not simply the object of forces of technological and organisational change, determined elsewhere. They played a vital role in shaping those forces – 'The diverse group of individuals who staffed the early corporation . . . did not so much react to it as they did design it'.

Early chapters of the book outline the declining autonomy of a nineteenth century localised, merchant class – powerful in economic, political and social terms – at the hands of a nascent corporate producers hegemony. However, Zunz is careful to point to the spatial and organisational *variants* on offer in early corporate America. A range of corporations is studied including Du Pont, the Chicago, Burlington & Quincy Railroad, the Metropolitan Life Insurance Co., Ford, and General Motors, each used as an exemplar of a particular form or facet of corporate evolution. The scientific rationalisers of Du Pont and GM are contrasted with the Veblenesque 'tinkerers' of Ford, for example. This selective process does present certain problems however. Some deft footwork links the growing concerns of the progressive movement and muckrakers with a growing social conscience of the new corporate order. The example Zunz uses in this case is Metropolitan Life, whose 'search for scientific information about health and disease and the attempt at prevention were animated not only by the search for profit but also by the search for collective good' (p.97). This may be so of Metropolitan life, but there remains another corporate story of brutal working conditions, anti-union drives, often through armed conflict, the company town, callous manipulation of labour markets and ethnicity etc. which could be used to balance the account, and which Zunz rather ignores.

Zunz tends in the early part of the book to rely on the secondary texts, especially those of Chandler and Hounshell, and, despite his avowed intention, there still seems to be a preponderance of elites, moulding corporate culture by theory or the seat of their pants. It is in the later chapters that this changes and, for me at any rate, the book comes into its own. Chapter four, 'Inside the Skyscraper', and chapter five, 'The Collar Line', reveal Zunz's considerable skills and scholarly effort in building a profile of the burgeoning white-collar workforce. Using the oral histories and census material to complement company records, Zunz constructs an impressive account of working conditions, changing technological, organisational and gender-related divisions of labour and the social and ethnic profiles of the expanding group of white-collar workers. He also traces the dynamics between the external societal and internal corporate construction of a changing set of moral codes and the way in which corporate life develops along certain trajectories – such as the feminisation of certain jobs and the exclusionary processes which promote Americanisation. Also studied are the ways in which middle-class values permeate white-collar work, creating and perpetuating divisions between office and shop-floor.

Zunz's challenge to the Braverman degradation thesis is a little disappointing. For example, he is content to point to the mutual expectations, within the corporation and the family, that feminised and routinised work would be temporary, and therefore the ramifications of 'deskilling' are of minor consequence. A similar lack of theoretical engagement is also revealed in the rather unproblematic use of the term 'middle class' where related criteria such as remuneration, power or control over the labour process are not really confronted. For Zunz it seems to be enough to point out that office workers thought they were middle class, or did not care if their jobs were designed and controlled from elsewhere. As such, this seems to me to weaken arguments which the book originally set out to prove.

Two final chapters break new ground in an attempt to show how the corporate ideology was carried by sales agents into rural America, and how salesmanship became a systematised into a 'science of service' which inspired a growing corporate sales staff. These are indeed neglected areas of study. However, a rather limited and at times uncritical use of sources such as company magazines and conference reports leads to some rather unconvincing assertions here. Many of the exhortive articles and speeches, built around a set of idealised values, which Zunz quotes, have the same ring of unreality as the avalanche of human relations management literature which began to appear during the same period. These have fooled many historians into thinking they somehow represented what was really going on.

Making America Corporate is very well written, and is without doubt a valuable and timely addition to the history of corporate evolution. It marks the path we should follow towards understanding the complex and multivariate influences shaping the corporation, and the interaction of social and demographic factors with the explicit design of structures of work. Zunz has gone some considerable way towards outlining the changing role of workers and managers throughout the whole hierarchy of the corporate organisation – who they were, what they thought, and how they related to, and changed, not only the corporation, but also society outside it.

Centre for the History of Science, Technology and Medicine,
University of Manchester RICHARD COOPEY

MORTON KELLER, *Regulating a New Economy: Public Policy and Economic Change in America, 1900–1933* (Cambridge, MA, and London: Harvard University Press, 1990. Pp.X × 300. £21.95).

This is a very detailed history of public policy in the US in response to the rise of what the author calls the 'new economy' of early twentieth-century America, characterised as including the rise of big business, large-scale technological change, and a shift of emphasis in production and distribution from capital goods to consumer goods. The central argument of the book is that this public policy response was dominated by institutions and ideologies which persisted from a previous age. Thus a key theme is what Keller sees as the slow adaptation of public policy to new issues thrown up by economic and technological change.

The other, more polemical, thrust of the book is that public policy making was pluralistic in character. Regulation was not dominated by one interest group, public or private, but by a range of bodies and institutions, reflecting the pluralism of the American polity. The line of argument is pitched explicitly against a strong tradition in American historiography, from John Chamberlain's *Farewell to Reform* in the 1930s to Martin Sklar's *The Corporate Reconstruction of American Capitalism* in the 1980s, which have emphasised the dominance of big corporations over the American economy and polity in this period.

The approach of the book is resolutely empirical. Whilst the book has a clear and frequently reiterated 'line', its method of arguing is to pile up example upon example. This is justified by comparing 'predetermined theoretical patterns' with the 'rich, complex structure of social experience'. This is, of course, a well-known rhetorical device – what you write is rigid theory, what I write is based on experience. The result is a book which is marvellously full of detail and insight, but which ultimately fails to persuade, as arguments based on example must always fail when the representativeness of the examples remains undiscussed and unclear.

The complexities of regulation are addressed across an enormous range of issues – including not only old favourites like anti-trust, utilities and trade unions, but also such areas as housing and town planning, agriculture and new technologies like trucks, buses and automobiles. In all these cases Keller draws upon a very wide range of mainly contemporary periodical literature, coupled with a wide range of historical writing. Reasonably enough, in trying to cover so much ground, primary sources are not deployed. The majority of the material is of a legal or political character, rather than directly economic, and much of the most interesting parts of the book relate to the problems of the legal process in coping with new political demands for regulation of the economy. The ingenuity of the law is sometimes both striking and amusing. For example, the essentially aesthetic campaign against billboards was eventually bolstered by legal decisions which draw them into the law of nuisance, claiming, implausibly enough, that billboards endanger the health, safety, welfare and even morals of the community.

Each of the chapters on various aspects of regulation has a brief comparative section, contrasting US with European, especially British experience. Some interesting points emerge from this, though Keller is not always as authoritive on European as he is on US history. For example, it is clearly wrong to say that J.A. Hobson was a 'lonely and largely unheard' voice advocating a capital levy in Britain after World War I. In fact so strongly did many feel about reducing the National Debt, that probably most professional economists in Britain favoured such a levy, including orthodox figures like A.C. Pigou.

In sum, this is a book to be read for its specific points and particular sources on an enormous range of US regulatory activity. There is a vast amount to be gained from it even if, like this reviewer, you find the general argument as much tendentious as persuasive.

Brunel University and London School of Economics,
Business History Unit

JIM TOMLINSON

DIANNE NEWELL, *The Development of the Pacific Salmon-Canning Industry: A Grown Man's Game* (Montreal, 1990. Pp.xvii + 303; illus; maps. £33.20).

Even the most successful collections of documents sometimes disappoint as well as satisfy. This may well be the case with the volume under review, for it tends to fall, somewhat uneasily, between business history and biography.

The Development of the Pacific Salmon-Canning Industry comprises a selection from the Henry Doyle papers which are housed in the Library of the University of British Columbia. Doyle was well placed to record the history of this important industry. He was the founder and, for two years, the general manager of the British Columbia Packers' Association; he went on to purchase and/or manage many other west coast canneries; and even when he finally left the industry during the 1920s, he continued to collect – and to create – material on salmon-canning until his death, at nearly 90, in 1961.

Professor Newell is well qualified to edit Doyle's papers. She has brought together a wide-ranging mixture of reports, notebooks, petitions, telegrams and correspondence together with extensive extracts from his unpublished manuscript on the 'Rise and Decline of the Pacific Salmon Fisheries'. The material is arranged in five chronological sections, each of which is introduced by a succinct, but valuable, introductory essay; and these sections are buttressed, in turn, by a general introduction, and by a statistical appendix and a 20-page glossary of terms used in the industry.

The collection is successful in recording, and raising questions about, the development and management of the industry during the first quarter of the twentieth century. It is particularly informative about the establishment in 1902 of the British Columbia Packers' Association, suggesting, for example, that the amalgamation was intended, not to produce economies of scale, but to eliminate inter-cannery competition for fish and labour. It provides a great deal of detailed information about the financial, geographical and technological circumstances of individual canneries; and it does something to further our understanding of the canners' handling of the 1904 strikes that brought together an unprecedented, and threatening, combination of Indian cannery workers and Indian and Japanese fishermen.

The collection is less successful in revealing the personality, attitudes and achievements of Doyle himself. This is no minor matter. For it makes it difficult to assess the reliability of Doyle's views on the many different aspects of the industry upon which he recorded his opinions. Thus it would be be helpful if Professor Newell had felt able to comment more fully on the extent to which she believes that Doyle's views of the industry, its entrepreneurs and its managers were coloured by the bitterness that he felt towards the British Columbia Packers' Association and others with whom he had been associated.

Nothing, of course, is easier than to regret that an author has not produced a different book. Nonetheless, this volume would probably be more satisfying if it focussed more explicitly on business or on biography. As it is, it leaves one wishing that Professor Newell had either written more herself about the business and economic history of salmon-canning or that she had selected documents that revealed more about Henry Doyle and his particular contribution to the development of the industry.

Wolverhampton Polytechnic JOHN BENSON

TOM KEMP, *The Climax of Capitalism: The US Economy in the Twentieth Century* (London and New York: Longman, 1990. Pp.xii+250; £18.95 hb and £7.95 pb).

This volume outlines the growth and relative decline of the most powerful capitalist economy in the world. Starting in the nineteenth century, but with most emphasis on the period since 1920, the author has produced a chronological account which terminates with the end of the Reagan presidency. Chapters on the 1920s, the depression decade and World War II are followed by those on the 1950s, the 1960s, the 1970s and the 1980s. There is also a chapter on the structural changes in US capitalism which have taken place since 1945. In fact; approximately half the volume is devoted to the post-Second World War period.

It is very convenient to have changes in the twentieth-century US economy presented in a single work, especially as North America has such a powerful influence upon the rest of the world. The most obvious points are covered, though, given the length of the book, not always in great detail. The style is clear and straightforward; the reader does not require a formal knowledge of economics.

Although this book could serve as an introduction to the modern American economy, it has a number of disadvantages. The analysis lacks depth and the bibliography provided at the end of the text is a poor substitute for a more selective guide to further reading at the conclusion of each chapter. For example, the investigation of events during the massive economic contraction which took place between 1929 and 1933 is not particularly insightful. Nor is the account of the New Deal a refreshing portrayal of this massive crisis of capitalism. It is indeed curious that none of the works of Ellis Hawley, who has made such a substantial contribution to our understanding of the economic history of this period, are cited in the bibliography. After 1945, students of

US economic history find the literature is more scattered and often technical. They will benefit from the opportunity to discover some of the challenges of the post-war period in a few chapters. However, had the author chosen a thematic rather than a chronological approach, some of the long term changes which most fascinate students of modern America, such as price fluctuations, regional growth, productivity decline, the changing industrial structure and the rise of foreign competition could have been identified and analysed in a more satisfactory fashion.

University of Leicester PETER FEARON

W.R. FRISBEE and M.S. SOMMERS (eds.), *Services in Canada* (London: Frank Cass, 1990. Pp.ix + 173; illus.; maps. £22.00).

This collection of articles, which previously appeared in the *Services Industries Journal* in October 1989, was brought out in book form by Frank Cass & Co. to reach a wider audience than the subscribers of this very specialised journal. This same strategy is also being applied to other Frank Cass journals including *Business History* itself. As the social sciences become increasingly compartmentalised as to be incomprehensible to outsiders, such 'theme issues' take on more significance; they can speak to an issue or subject across disciplinary boundaries while retaining the rigour which comes with a high degree of specialisation. This volume succeeds on its own merits in the sense that the papers provide a broad but nonetheless relatively detailed survey of Canadian services industries. Although a few papers fail to go beyond the descriptive, most contain a great deal of analytical content and a number provide policy prescriptions for the future.

Outside of financial services, in particular banking, business historians have largely eschewed the study of service industries in favour of manufacturing industry. Yet, as a share of gross domestic product (GDP), the service industries in advanced industrial societies have overtaken other economic sectors, including manufacturing. In fact, the first essay, Hugh Henderson's paper on 'Canada's International Transactions in Services', illustrates the difficult process of determining what proportion of GDP can be attributed to services in national accounting systems and how recently we have begun the process of disaggregating services in national and international (United Nations) industrial classification systems. The papers which follow deal with the provision of education, government, medical, dental, legal, accounting, financial, telecommunication, marketing and cultural services in Canada. Given that they were written largely with the contemporary business and public policy community in mind, it should not be surprising that they are of marginal interest to business historians. Little attention is devoted to the individual institutions, public or private, which provide these services or their evolution. A few essays such as R. Brian Wilson's paper on telecommunication services, James G. Barnes' essay on marketing research and Gordon F. Boreham's article on non-bank financial conglomerates, have short historical introductions which pay brief attention to the evolution of the individual firms involved. None of the papers contains detailed information on the managerial and organisational configurations of interest to business historians. Nevertheless, given the absence of historical material relating to these industries anyone contemplating a foray into the business history of firms producing these services in Canada might wish to consult this book in the preliminary stage of research.

Johns Hopkins University GREGORY P. MARCHILDON

Z.A. KONCZACKI, JANE L. PARPART and TIMOTHY M. SHAW (eds.), *Studies in the Economic History of Southern Africa. volume I: The Front-Line States* (London: Frank Cass, 1990. Pp.xiv + 228. £30 cloth, £16 p/b).

The ambition of this collection of essays is to synthesise the mass of research which has appeared on the economic history of Southern Africa over the past decades, but its achievements fall short of such an objective. Neither 'Southern Africa' nor 'the Front-Line States' exactly describes the geographical scope of the book. Namibia, Botswana and Malawi are included, while Tanzania, Zaïre and Madagascar are excluded, and South Africa, Lesotho and Swaziland are treated in a companion volume. Chronologically, there is a pretence at embracing everything from the iron age to the present, but the coverage of the first ten centuries or so is almost entirely encapsulated in a breathless and often inaccurate survey of the iron age by Z.A. Konczacki. The focus in all the other chapters is on the twentieth century, but the collection is unfortunately not up to date. A rapid perusal of the notes and bibliographies shows that most contributions seem to have been completed in 1986. Indeed, Jonah Seleti's dated chapter on Angola and Mozambique (which is full of misspellings of Portuguese words) and Philip Longmire's superficial essay on Namibia appear to have been ready as early as 1984. This collection contributes little specifically to business history, as the focus is squarely on political economy. Even from this point of view, the book can rarely be said to supersede Longman's authoritative 1983 history of Central Africa, edited by David Birmingham and Phyllis Martin. The perceptive essay by Marcia Burdette on industrialisation in Zimbabwe, Zambia and Malawi is the major exception to this statement, and it is undoubtedly the best chapter in the book. While clinging to the idea that settler political power mainly accounted for industrial concentration in Zimbabwe, her material often shows that economic and social factors were as important as political ones. Had she considered the case of Zaïrean industrialisation, concentrated just across the artificial colonial frontiers, and had she looked more closely at industrialisation before 1945, she might have been forced to depart even further from her thesis of the primacy of political factors. In theoretical terms, Burdette and her co-authors are clearly torn between the old tenets of dependency theory and the intrusion of resurgent neo-classical economic notions. Past ideological certainties tend to win out over present trends, however. Self-sufficient economies and import-substitution strategies are still put forward as the long-term goal, even in cases as patently unsuited to such ideas as Namibia and Botswana. All too often intervention by the state continues to be seen as the ultimate solution to economic problems, especially in Kenneth Good's rather mechanistic survey of class formation in the rural areas of Zimbabwe, Zambia and Malawi. The curiously jejune tone of much of the theoretical framework of the contributors is perhaps best summed up by Andrew Murray and Neil Parsons at the beginning of their competent and often illuminating chapter on Botswana. Murray and Parsons profess themselves puzzled at the 'paradox' that Botswana has done so well economically with a minimum amount of state ownership and regulation, and a maximum amount of public provision of information and general economic stimulation by a democratic régime. Scholars who have studied the phenomenal growth of capitalist economies in East and South-East Asia would find this to be anything but paradoxical.

School of Oriental and African Studies, London W.G. CLARENCE-SMITH

JOEL MOKYR, *The Lever of Riches: Technological Creativity and Economic Progress* (Oxford: Oxford University Press, 1990. Pp.ix + 349. £20.00).

Joel Mokyr examines the long term historical evolution of technological development from classical antiquity onwards. He is particularly concerned with comparisons of the strength of technological creativity across countries, regions or societies, and in different periods of time. He looks at the shift in technological leadership from China to Europe after 1400, at the rise of British technological initiative during the industrial revolution and its subsequent decline. In doing so the book covers a wider span than is usual, and provides an interesting synthesis and critical discussion of a large body of literature.

This edition is definitely to be recommended rather than the shorter text book version of the same material (*Twenty Five Centuries of Technological Change*, reviewed in *Business History*, Vol.33 No.3 (1991)). In my view Mokyr's intentions are far more clearly expressed in this book, his case is better argued, and the extended length allows him to do greater justice to his historical descriptions. It is unfortunate that the analytical content of the shorter text emphasises his criticisms of others in the book, and not his own positive contribution.

His essential critique of other approaches arises where they are treated as general explanations of the path of technological progress, at which point he is keen to reveal their shortcomings. However, it has to be said that Mokyr himself occasionally makes unsubstantiated general claims, such as when (on p.255) he calls the notion of labour-saving technological change 'a misunderstanding that has persisted over the centuries'. Of course he may mean that there is no reason why technological change is *necessarily* labour-saving; but he creates the impression of believing that the conditions under which it is *never* prevail.

In my opinion the most important analytical contribution which Mokyr makes is to be found in his Chapter 11 on 'Evolution and the Dynamics of Technological Change'. Drawing on the evolutionary studies of biologists and paleontologists, Mokyr argues that periods of gradual, cumulative and incremental technological change are punctuated from time to time by short phases of feverish change which bring about jumps, analogous to the creation of new species. He treats these two types of change as different. He acknowledges that qualitative transformations may be sparked off by a series of smaller incremental steps, but points out that this should still be distinguished from purely cumulative movements which do not have this effect. However, in a technical sense the sharp separation of the two may be somewhat overplayed. In the non-linear dynamic models which have recently become popular amongst economists advocating evolutionary theories of technological change, periods of gradualism naturally give way to bifurcation and qualitatively new states, as part of the same process. In analytical terms, there is no need to assume an occasional switching between two conflicting alternative models.

To apply his argument Mokyr differentiates between microinventions as incremental adaptations, and macroinventions defined as radical new departures without any clear precedent. I think he shows that this is a useful distinction when examining a particular field of technology or the evolution of a given set of techniques. I am less convinced that it is the most helpful way of applying his view when it comes to the general social comparisons which are the major theme of the earlier part of the book; or to the explanation of what he calls 'Cardwell's Law', that highly technologically creative societies only remain so only for relatively short historical periods. As Mokyr himself points out, sustained growth requires a combination of macroinventions and microinventions, and some macroinventions may be isolated and insignificant.

When moving beyond the study of individual techniques, what matters is what Mokyr refers to as clusters of related macroinventions, whose timing is explained in part by their collective linkages. These represent what modern Schumpeterian economists such as Freeman, Perez and Dosi have described as a shift in technological paradigm. Rather than starting from the distinction between macroinventions and microinventions, at a broader level of analysis it may be more appropriate to begin from major breaks in the underlying pattern of technological opportunities. These may rely upon the formation of new core technologies or new branches of technological activity, but they alter the path of cumulative and incremental change in all sectors. One might then distinguish between rapid growth as a consequence of cumulative learning within a sector, and that which results from external spillovers through complementary developments elsewhere. This in fact would be consistent with Mokyr's view that evolution should be analysed at different levels of a hierarchy. He refers to the individual firm (organism) and the prevailing technique (the species), but there is also the interaction between technologies (between species).

Overall, this is an important contribution which underlines the value of historical study in thinking about technological development. As Mokyr says, a longer term perspective is essential when investigating technological evolution, which can only be properly understood as a longer term process. All historians of technological change will at least have to consult this book, and there is much in it to attract other readers with an interest in business history as well.

University of Reading JOHN CANTWELL

WILLIAM LAZONICK, *Competitive Advantage on the Shop Floor* (Cambridge, MA: Harvard University Press, 1990. Pp.419. £29.95).

Lazonick contrasts the relationships between technology, the organisation of work, and labour relations in Britain, the United States, and Japan between the 1840s and the 1980s. His central theme is the consequences for productivity of the different ways in which craft traditions persisted or were altered. Lazonick argues that large firms possessing 'product-market power' are essential in order to provide the 'organizational commitments' and long term stability for workers on which effort and high productivity are dependent. Management will then maintain high levels of investment. A virtuous circle of high productivity, rapid economic growth and international competitive advantage will result. He is particularly interested in how institutions and practices which are effective in one period can become obstacles or disadvantages later. There is a resumé of the decline of British textile manufacturing and, more generally, of British manufacturing industry, the emergence of US mass production, and the more recent uncertainties afflicting American business in the face of Japanese economic growth. Along the way Lazonick also rejects the assumptions of neo-classical economics, offers revisions of Marx's analysis of capitalism, criticises contemporary advocates of a greater reliance on markets, and replies to some critics of his earlier work.

In some respects the coverage is rather uneven. The first 67 pages are an evaluation of Marx's views on industrialisation. Then 145 pages are devoted to Britain, primarily with assessing the persistence of craft traditions in the cotton textile industry. Some of Lazonick's contribution to the entrepreneurial failure debate is repeated. He concludes that for British firms the 'right to manage had been irrevocably lost sometime and somewhere in the last half of the nineteenth century' (p.198). There are then 71 pages on the development of mass production in the United States and its association with managerial rather than worker control over production operations. The conclusion is that American managers successfully defeated craft influence and by the 1920s had installed managerial control of work. In a discussion of Jacoby's work, Lazonick offers a more positive view of the extent and impact of personnel management policies in the 1920s. By the 1960s, however, Lazonick sees seniority rules and lack of interest in individual workers sapping the degree of effort in US manufacturing. Finally there is a brief (14-page) outline of aspects of Japanese labour relations emphasising an absence of craft unions, the use of more co-operative relationships, and a commitment to retaining individual worker identity. However, the treatment is only schematic. The recent article by Lazonick and Mass in this journal (October 1990) provides a more detailed evaluation of Japanese development in textiles, and indeed reflects this book's general thrust and style.

There are flaws. The study is weighted too heavily towards Britain and textiles. Perhaps the timing and extent of the rise of US managerial capitalism is assumed rather than proved and, inevitably emphasis on the shop-floor results in neglect of other factors. Nonetheless, overall this is a bold attempt at a comparative analysis which mixes many positive features of old-style political economy with an impressive grasp of more recent literature on work and managerial strategies. To some extent the arguments will be familiar from Lazonick's earlier work; the first five chapters are all based on earlier articles. Nevertheless, throughout the study there are interesting ideas and some intriguing possibilities for further research. The book should be of interest to business historians for its thought-provoking account of the impact of labour-management relations on broader economic performance. There is a detailed footnotes section. Lazonick's concern for 'big' questions and a willingness to devote the effort required to tackle them is impressive.

University of Glasgow MICHAEL FRENCH

JOHN HEATH (ed.) *Public Enterprise at the Crossroads: Essays in Honour of V.V. Ramanadham* (London: Routledge, 1990. Pp.xix, 304. £40.00).

This collection of essays, compiled in honour of Professor V. V. Ramanadham, a distinguished student in the field of public enterprise, is wide varying both in its geographical scope and its choice of themes. Its essential purpose is to examine in detail the public enterprise experience in numerous parts of the world, especially, but not exclusively, in developing countries at a time when the future of such activity is at best uncertain and at worst in crisis. Inefficiency, unplanned expansion, poor service and financial loss have characterised much of the experience of public enterprise within developing countries themselves and internationally. Ultimate responsibility for this state of affairs has frequently been laid at the door of governments. In many countries, the sheer scale of public enterprise activity has developed beyond the administrative capacities of the central authorities, whilst ideological barriers, corruption and the power of vested interests have also worked to deprive it of any lasting or noticeable success. The requirements placed on public enterprise are an additional problem, frequently demanding that the enterprises play not merely a commercial but also a social or developmental role whether or not such an objective is either realistic or feasible.

The strength of this book is that it tests such generalisations and presumptions against experience in a number of countries, including Hungary, India, Malaysia, the People's Republic of China, Africa, Argentina, Chile and Greece. These case studies are themselves prefaced by a careful review of the methodological difficulties faced in comparing the scale and performance of public enterprise in such a wide range of developing countries, not least in the handling of comparative statistical data. Evidence of inconsistent and unco-ordinated action within the public sector abounds, as does that of inadequate financial management, naked political expediency, and managerial inefficiency. But all is not gloom. The learning process may have been long in many cases, but some countries, such as Pakistan and Greece, have registered marked improvements in recent years, noticeably in the area of administrative decision making and the intensity of state control. Although such improvements are more the exception rather than the rule, there is no easy way forward for the majority of countries, either by way of reform or privatisation. Initiative and enterprise are frequently stifled by the power of vested interests, the dead-weight of economic ideology or by the blight of a powerful bureaucratic machine.

But therein lies the challenge. Although the weight of detail in many of the chapters does not make for easy reading, what does emerge from this volume is the earnest attempt made by the contributors to lay bare the experiences, ideas and lessons of developing countries in a way that might encourage a further learning process both between public officials and professional consultants, academic or otherwise.

University of Birmingham W. R. GARSIDE

HOWARD F. GOSPEL (ed.), *Industrial Training and Technological Innovation* (London: Routledge, 1991. Pp.x + 246. £35).

In 1988 the Anglo-Japanese Business History Conference, devoted to technical education, was held at the London School of Economics. Participants, who included the reviewer, will be pleased to see those valuable papers brought to a wider audience under the editorship of Dr Gospel, the conference organiser.

The core implicit theme is Britain's relative failure and Japan's success in industrial training and technical education. The irony, often pointed out, was that Japanese technical education was in its early stages imported from Britain. Henry Dyer from Glasgow set up his Polytechnic (the forerunner of the Faculty of Engineering of Tokyo University) in 1873. British experts like Professors Perry and Ayrton went to teach in Japan and by 1868–72 Japan was spending 40 per cent of its budget on foreign experts. Reciprocally select Japanese like Yozo Yamao were sent to Britain to glean first-hand expertise to fuel the Meiji industrialisation. At a latter time, Hochidi Ushida points out, the supremacy of modern Japanese electronics was rooted in their wartime research efforts to catch up the Allies in radar. Yet, imitative and receptive as the Japanese have been, the pupil-master relationship has been reversed as Japanese excellencies and British deficiencies in education have contributed to the divergent economic performances of both countries.

Britain experienced a decline in the traditional apprenticeship system with little to take its place, though Elbaum suggests it lasted longer than in the USA. Its decline was partly due to the trade unions driving up the cost of juvenile labour. Systems that might have substituted for declining apprenticeship such as secondary technical education or in-house company training were neglected. Gospel rightly deplores the decline of the secondary technical schools after 1944 and finds that 'training was not an activity to which entrepreneurs devoted much attention'.

At a higher level too Britain is found wanting. Anna Guagnini suggests that although universities did introduce science and technology for industry in the later nineteenth century yet this did not develop to the same extent as elsewhere and that 'a decidedly small stream' of students went into industry. From a close study of the University and Technical School in Manchester she finds that science faculties were unable to attract full time students and that the manufacturers' need for university qualified personnel 'emerged slowly'. Britain also relied too much on the public schools and liberal arts degrees from Oxford and Cambridge instead of business education.

When we turn to the Japanese side, the Japanese historians are as bullish about their system as the British are self-critical. Uchida shows the soaring growth of Japanese engineers (from 182 to 10,000) between 1890 and 1920. Moreover as a late starter Japan got the balance right between theory and practice. Morikawa emphasises the hard practical work that was part of the training of the Japanese graduate engineer and the 'respect for the workplace'. Gospel points out that Japanese firms starting late and behind the West 'had to rely from the start on formally trained managers and technical staff' so that by 1930 two-thirds of senior executives in Japanese industry were college graduates. By now, Kevin McCormick tells us the Japanese produce 2½ times as many graduate engineers per head of population as England.

Japan has also drawn strength from retaining the junior technical school and

Fukasaku shows the importance of in-firm training with the works school to produce teenage technicians at the Mitshubishi Nagasaki shipyard. One of the most interesting papers is that of Eisuke Daito which tells the story of the curious development of cheap shoes from bicycle tyres, rubber soles and canvas through to Kemikaru 'chemical shoes' made of PVC. Here labour-intensive outwork worked in dual economy conjunction with large rubber and chemical companies. Even here technical education in Mr Furuya's junior college for training graduates had its part to play.

Through the book various factors are raised in explanation for the differences between Britain and Japan. McCormick lays stress on the strong state support for Japanese technical education whereas in Britain it was low and slow. Japanese universities were developed by the State for national manpower needs whereas their autonomy in Britain has led to grudging State support and much less clarity over their social and economic function. Japan as a late starter has experienced a more rapid growth of secondary and higher education than Britain and, crucially, in Japan educational qualifications matter whereas in Britain hereditary connections and practical experience are accorded more weight.

In spite of the detail of the various essays and the specific insights they yield, the fundamental difference between the countries remains elusive. It may come down to something basically cultural, what McCormick identifies as the 'Confucian respect for education'. It was reflected last summer in the very large Japanese contingent to the International Economic History Conference in Leuven, led by their Crown Prince who as a scholar in his own right participated with his own paper.

This incident prompts similar reflections to the essays in this volume. Readers interested in this symposium will also be interested in Penny Summerfield and Eric Evans' *Technical Education and the State since 1850*. By publishing coincidence they make a complementary duo.

University of East Anglia MICHAEL SANDERSON

MARK CASSON (ed.), *Multinational Corporations* (Aldershot, Hants; Edward Elgar Publishing, 1990. Pp.xvii + 609. £95).

This book is a collection of recent papers on the multinational enterprise. With only a very few exceptions the papers were published in the ten-year period 1978–88. According to Casson's introduction, 'both the quantity and quality of research on the multinational enterprise (MNE) have increased dramatically over the last few years' and 'the rapid growth of highly relevant research is reflected in the selection of papers in this volume'. The introduction contains a survey of recent work in the field and rationales for the selection of papers in the main text; unfortunately, at a perfunctory four pages, the introduction is disappointingly brief and rather fails to whet the appetite for what is to come. The book is essentially a reading course on recent research into the MNE – research that will in the fullness of time be assimilated into more accessible monographs, and related to earlier scholarship. The book is thus perhaps a little too specialised for the business historian's book shelf, although it certainly has value as a work of reference.

The book is likely to prove intimidating reading to the business historian who is not also a quantitative economist. Formulae abound and there is preponderance of jargon. However, the material is well organised and a scholar seeking the latest research on some aspect of the MNE will likely find it here (or in a forthcoming companion volume, *International Investment*, to be edited by Peter Buckley). For example, one topical concern is the impact on the domestic research-base of the acquisition of high-tech firms by foreign-owned multinationals. A section entitled 'Organization and Location of R&D' contains three papers which – nestling amidst the economic data – contain several qualitative insights. (It was disappointing that none of the papers concerned the experience of Japanese takeovers, however.) Another topical concern, which would have to be addressed by any history of the electronics industry, for example, is the economics and politics of off-shore production. Again, there are three papers in a section entitled 'Offshore Processing and Internationally Rationalized Production'; between them these papers cover the electronics industry as a specific case study, and the economic and political framework more generally.

Altogether, the collection of 31 papers is grouped into ten thematic sections, several of which would be relevant to business historians interested in comparatively recent developments. Themes covered include: the early analysis of MNEs; market structure and oligopolistic reaction; technology transfer; the organisation and location of R&D; intra-firm trade; off-shore production; marketing; and international comparisons. The two papers of most relevance and accessibility to business historians would probably be S. H. Hymer's classic 'The Large Multinational Corporation' (1968 – translated from the French); and Mira Wilkins' 'European and North American Multinationals, 1870–1914', which appeared in *Business History* in 1988.

In conclusion, this book could be weakly recommended as a library purchase – but at £95 for 600 pages of reprinted material (much of which can be found in recent, accessible journals) it is extravagantly priced. Moreover, the price is not an indication of the quality of the physical production – the facsimile reproduction is generally uneven, and several papers have pronounced curvature in the margins, presumably due to the careless photographing of pages from tightly-bound journals.

University of Warwick MARTIN CAMPBELL-KELLY

BOOKS RECEIVED

MARGARET REID, *Abbey National: Conversion to PLC* (London: Pencorp Books, 1991. Pp.ix + 193. £15.95).

HOWARD J. SHERMAN, *The Business Cycle: Growth and Crisis under Capitalism* (Princeton: Princeton University Press, 1991. Pp.xxi + 447. No Price).

J.F. WILSON, *Ferranti and the British Electrical Industry, 1864–1930* (Manchester: Manchester University Press, 1991. Paperback. Pp.ix + 165. £10.95).

MICHAEL J. FREEMAN and DEREK H. ALDCROFT, (eds.), *Transport in Victorian Britain* (Manchester: Manchester University Press, 1991. Paperback. Pp.vii + 310. £14.95).

KNUT BORCHARDT, *Perspectives on Modern German Economic History and Policy* (Cambridge: Cambridge University Press, 1991. Pp.xviii + 277. £13.95).

ALON KADISH, *Historians, Economists and Economic History* (London: Routledge, 1991. Pp.xii + 297. Paperback. £14.99).

JONATHAN FRIMPONG-ANSAH, S.M. RAVI KANBUR and PETER SVEDBERG (eds.), *Trade and Development in Sub-Saharan Africa* (Manchester: Manchester University Press, 1991. Pp.xvii + 405. £37.50).

JERZY OSIATYNSKI (ed.), *Collected Works of Michael Kalecki, Volume II; Capitalism: Economic Dynamics* (Oxford: Clarendon Press, 1991. Pp.xiv + 631. £70.00).

JOHN SAVAGE and ALAN BOLLARD, *Turning it Around: Closure and Revitalization in New Zealand Industry* (Oxford: Oxford University Press, 1990. Pp.ix + 156. £13.50).

ROBERT E. KOHLER, *Partners in Science: Foundations and Natural Scientists, 1900–1945* (Chicago: University of Chicago Press, 1991. Pp.xv + 415. £27.95).

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SURVEY ARTICLE

British Business History: A Review of the Periodical Literature for 1990

ALAN MCKINLAY
University of Glasgow

The range of issues considered by journal articles in British business history during 1990 suggests a discipline which is growing in ambition and maturity. It is no longer the case that business historians are unwilling to stray much beyond 1914 or to draw on the insights of disciplines other than economic history and classical economics. In particular, the willingness of business historians to consider twentieth-century developments is an indication of the discipline's broadening scope. Despite this trend, however, the coverage of business history remains uneven, skewed towards the recent fate of the nineteenth-century 'staple' industries rather than the emerging sectors of the late twentieth century. A feature of the year's periodical literature was that it demonstrated that detailed studies of individual enterprises still have an important role to play in business history, not least as checks and counterweights to broader interpretations about, for example, the impact of governmental intervention or 'entrepreneurial failure'.

I

While the theoretical development of business history has undoubtedly been bedevilled by the emphasis on individual companies, a number of studies of individual mines have demonstrated the importance of disaggregated data.[1] Ben Fine uses production functions from individual pits to launch a frontal attack on the conventional historiography of Kirby and Buxton, which ascribes the limited rationalisation of the coal industry to a pernicious combination of statutory featherbedding and woeful entrepreneurship.[2] The 1930 Coal Mines Act signalled the end of the state's policy of voluntary rationalisation and the first steps towards direct intervention to restrict output. Kirby's influential thesis that the formation of statutory controls actually ossified the structure of the industry is also challenged by Boyns, for whom Kirby's case rests on selecting 1936

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as the end date for his study, before an increased rate of amalgamations in the remaining peacetime years.[3] Both Fine and Boyns conclude that the 1930 Act was insufficient in itself to deter any compelling commercial or production case for merger. Nor is the relationship between company amalgamations, mechanisation and productivity entirely clear-cut. For, as Greasley points out, the slow secular decline in productivity which had occurred between 1880 and 1914 was reversed between the wars.[4] This reversal of overall productivity decline and the continued regional diversity of productivity patterns suggest a partial modernisation rather than a complete entrepreneurial failure. But if these excellent studies suggest the need for further comparative work at pit level then accounting historians have alerted us to the complexities of company business records which varied both between firms and over time. The lack of uniformity in colliery accounting practices was highlighted by Judith Wale's painstaking reconstruction of the recorded figures of five pre-1914 collieries.[5] However, Wale reminds us that it is dangerous to conclude that business leaders were misled by the failure of accounts to provide a fair picture of either the cost of assets or the value of the company as a going concern, since we have no knowledge of the other sources of information they used. Such is the unreliability of asset and profit figures for individual collieries that we should be extremely wary of broad generalisations about industry profit trends or standards of entrepreneurship. Wale's exemplary study offers a model for detailed examinations of enterprise-level financial and commercial calculations in the shipbuilding, engineering and chemical industries.

Accounting history also featured in the unlikely arena of labour relations in the coal industry.[6] Far from being the neutral, quantitative language Max Weber used as an index of increasing business rationality, accounting was introduced by coal owners to legitimise the use of a sliding scale based on the selling price of coal to determine wages.[7] From the late 1870s to 1914 accountants, sometimes of uncertain provenance, were used as arbitrators to lend an aura of professional impartiality to a process which related wages solely to selling prices, irrespective of changes in the cost of living. In the charged atmosphere of the Sankey Commission in 1921 the miners' union successfully altered the terms of debate by insisting on the superior morality of an individual minimum wage over the previous prioritisation of private profits. The expulsion of accounting information from post-1918 wage negotiations and, one might add, its signal importance in the debate surrounding pit closures in 1984–85 confirms, as Bougen, Ogden and Outram suggest, that the continuous expansion of accounting cannot be simply assumed to reflect the spreading rationality of all aspects of economic life. In this interpretation accounting becomes a managerial discourse, a historically formed language of the enterprise, rather than a universal feature of modern capitalism.

In the three decades before 1914 Britain gradually surrendered its global dominance of several commodity markets, not just manufactured products. But the loss of national economic advantage was felt most keenly by specialised economic regions. As Ed Newell demonstrates, Swansea became a leading world producer of refined copper in the early nineteenth century because of complementary locational advantages, particularly the ready availability of cheap smelting coal and low transportation costs.[8] Recognising their common interest in maintaining the area's entrenched market position, Swansea's copper barons formed a secret cartel in 1844 to avoid damaging price wars. Such collusion proved insufficient to avoid Swansea's decline as the emergence of foreign competitors using new technologies gradually eroded 'Copperopolis's' dominance. Swansea's decline was paralleled by the massive transfer of capital from Britain. In a fine essay, Charles Harvey and Jon Press link the institutional and personal networks of the City to its role as the principal conduit for this exodus of capital.[9] British mining businesses, investors and merchants relentlessly pursued minerals of all kinds across the globe. The City became the vital nexus of this global trade in commodities and finance. Although investment in international mining was an inherently speculative process, mineral discovery itself was not a matter of chance but can be explained in terms of economic variables, such as the increased demand for tin for industrial purposes.[10] One question which emerges from Matthews' study of the discovery patterns of tin from 1800 to 1920 is how far twentieth-century mining investment is based on economometric forecasts of mineral prices rather than speculative hunches.

II

For over a decade the historiography of British cotton has been dominated by William Lazonick.[11] For Lazonick the key to Lancashire's worldwide hegemony before 1914 lay in a web of complementary institutions underpinned by a skilled and experienced workforce. Conversely, cotton's twentieth-century decline was caused by a rigid industrial structure in which firms were locked into pre-1914 specialisations, rather than the vertical integration of the modern corporation. But in two complementary essays Margueritte Dupree argues that Lazonick's influential thesis ignores significant industry-level efforts to alter the institutional constraints, especially those operating on product markets, in the twentieth century.[12] Dupree's essays are based on the Raymond Streat diaries which she edited.[13] Streat's diaries offer an enormous running commentary on almost two decades of involvement in cotton industry–government relations. Over three decades the cotton masters are depicted as politically astute, well-connected collective actors rather than the passive playthings of market forces. In this period, the Manchester business community shifted from advocacy of free trade to a vocal protectionism, from pre-1914 ignorance of Japanese cotton to organised vigilance in the 1930s.[14] If the Lancashire cotton lobby was able to stem the haemorrhage of lost global market share through bilateral trade treaties in the 1930s then this was only a temporary stay of execution rather than a lasting reprieve. The 1945 Labour Government proved unreceptive to calls to extend further succour to an industry unwilling to modernise its technology and corporate structures. For Singleton, however, the cotton masters' resistance to modernisation was not yet more evidence of irrational conservativism, but based on a well-founded pessimism about Lancashire's future world competitiveness.[15] Indeed, in a companion piece, Singleton extends this analysis by arguing that there was an implicit unity of purpose linking all Lancashire's key cotton institutions in the two decades after 1945.[16] Far from seeking to regain global competitiveness through administrative innovation and technological renewal, business and union leaders' sole intention was to control cotton's rate of contraction.

Such revisions leave Lazonick's analysis of British cotton largely intact, and ignore the larger questions he poses for business and economic historians. For Lazonick offers not just a compelling anatomy of the declining competitiveness of British cotton but also a persuasive agenda for future research on the shifting comparative advantage across industries, not just the failing staple industries. The focus of such research should be the natural ground of business historians: to analyse the decisions of clusters of firms, not just individual enterprises, as key players in a dynamic institutional setting. The pursuit of what Mass and Lazonick describe as 'a dynamic and developmental' agenda avoids the vapid debate about the strengths or, more commonly, weaknesses of particular entrepreneurs and the static sterility of the 'new' economic history.[17]

Over the last decade, interpretations of the twentieth-century eclipse of Britain as a first-rank manufacturing economy have focused on the failure of the first industrial nation to make the transition to mass production and mass distribution, the hallmarks of modern corporate capitalism. Again, Lazonick has been among the standard-bearers of this diagnosis.[18] But, as Bowden perceptively points out, if domestic demand conditions were inadequate to support the transformation of the industrial process then marketing could have been used to overcome demand constraints.[19] Electric domestic appliance companies confronted a formidable array of barriers to achieving a mass market. To sizable price and income inelasticities there were the additional problems of wooing customers from gas and convincing the electricity companies that promoting hire purchase was an effective way of stimulating demand for electricity. While Bowden concludes that the case of the early electric appliance industry demonstrates the central role of credit in the demand function, it also raises wider questions for business historians. The social history of consumption – in this case the creation of what was a gendered mass market – is the obverse of the business historian's traditional focus on production and particular firms. Indeed, debates concerning the disintegration of mass markets for standardised products in the 1980s would benefit from historical studies of just how far such markets ever existed in Britain and marketing's role in their creation.[20] For the clutch of British textile firms which survived the 1979–81 recession, one strategy which appeared to offer some hope was assuming a global mercantile role in the value chain linking international production systems to high street retailers. This 'networking' strategy attempts to overcome two critical failings in British textiles' business strategy: a misplaced reliance on cost competitiveness in mass markets and, after 1950, the pursuit of vertically integrated corporate structures.[21] Chapman's outline of the decline and rise of textile merchanting over the last century offers business historians a model for evaluating the historical formation of current corporate strategies.

The relationship between management strategy and industrial relations has been a growth area in business history in recent years. 1990 was, however, a thin year for publications in this area. One exception was Laura Lee Downs' study of the Rover car company's efforts to move from batch to mass production in 1930.[22] An unintended side-effect of Rover's proposed production strategy was the levelling of all gender-based pay differentials because of the universality of the new Bedaux payment system. Rover's initiative threatened to destabilise the Coventry labour market and drew sharp protests from neighbouring firms. Downs points out the paradox of 'employers driven to defend their own discriminatory wage policies by obstructing another firm's efforts to render labour more productive'.[23] The Rover case illustrates the extent to which the range of possible managerial strategies of innovatory firms were limited by their fellow employers' adherence to traditional methods of labour control.

Perhaps the most challenging article in business history in 1990 was by Williams, Williams and Haslam, who argue persuasively that giant

British firms are moving out of manufacturing and into dealing and service activities.[24] This 'hollowing out' of British manufacturing is a process with roots in the 1960s, but one which has accelerated to breakneck speed during the Thatcher years. From a broad sweep of the political economy of the locust years of the early 1980s Karel Williams and his colleagues focus in on the strategies of 'pathological' firms such as GEC, Hanson and British Aerospace. Lord Weinstock's GEC has assiduously built a colossal cash mountain while its recent flurry of joint ventures has been stimulated by fear of take-over rather than a concerted attempt to break into new microelectronics markets. Similarly, British Aerospace 'is another company in retreat from manufacturing' with the Rover acquisition motivated by a strictly financial rationale rather than a genuine targeting of new civil markets.[25] The plight of British Aerospace exemplifies the rapid decomposition of the UK defence industry after almost four decades of stability.[26] Hanson's manufacturing interests, notably London Brick, are low-technology 'cash cows' which provide revenue flows to cover the periods between bursts of profitable asset trading, principally through the acquisition and partial dismemberment of under-valued manufacturing companies. For business historians, Williams and his colleagues raise two major questions. First, was the basis of such corporate strategies laid in the wave of mergers and acquisitions of around 1968–72, the period in which British corporate structures moved toward the multidivisional form?[27] Second, as the work of the Williams group suggests, contemporary business history requires a grasp of extraordinarily complex financial transactions which may be more important to company performance than the production of goods or the delivery of services.

Alfred Chandler's hegemonic influence over business history has resulted in a concentration on the evolution of strategy and structure and the neglect of management processes. Recent shifts towards flatter, less hierarchical organisational structures have been accompanied by several studies of the dynamics of strategy formulation in British multidivisional firms. The increased importance of informal interaction among executives and organisational politics in strategy formulation is closely related to the collapse of monolithic computer-based management information systems.[28] If avoiding interdependencies between business units and achieving financial synergies is the overwhelming rationale in conglomerate corporate strategy then the disintegrative logic of this objective is countered by the construction of an integrative corporate culture.[29] The key to motivating divisional managements is their inclusion in a continuous conference process with corporate executives to formulate overall strategy. Such a conference process is 'both a calculated technique and a real process into which everyone is drawn', a powerful method of creating a shared corporate culture.[30] The importance of such intangible factors as language and culture in the governance of the firm offers business history fresh analytical and empirical challenges which cannot be met by the tools of economic analysis.

III

The failure of business history to influence the corporate strategy literature, let alone feature as a core subject in British business schools has been lamented as the discipline's greatest failing. However, the most sophisticated analyses of contemporary business developments, such as Andrew Pettigrew's monumental study of ICI's competitive metamorphosis under John Harvey-Jones, *The Awakening Giant*, explicitly incorporate a historical dimension to avoid the banalities of 'quick-fix' prescriptions.[31] Equally, as Gourvish's examination of changes in British Rail in the period 1977–90 makes clear, business history can have a diffuse but profound impact on academic and political debates.[32] For Gourvish, the commissioned histories of electricity supply, coal and the railways all provided documentary ammunition for attacks on mismanagement in the nationalised industries.[33] Between 1977 and 1990 British Rail has travelled the same route as many other businesses, restructuring its organisation from hierarchy towards market, from command towards contractual relationships. The key to this 'managerial revolution' was the introduction of 'sector management' in 1982. But, if the tighter financial controls imposed by the Thatcher governments acted as the catalyst for change, then the sector concept was firmly rooted in British Rail's internally generated reforms of its executive processes through the preceding decade. Gourvish's conclusions, that change was an interactive process of administrative modifications which culminated in sectorisation and that strategy and structure changed symbiotically rather than sequentially, are clearly applicable to more than just British Rail. Not the least important of Gourvish's discoveries is a photograph of a very uneasy looking Mrs Thatcher, a premier who found the very idea of publicly funded mass transport abhorrent, aboard a train.

Detailed studies of relations between government and industry demonstrate the empirical limitations of the applicability of the concept of 'corporatism' in the British context. A given institution, firm or sector can be involved in a several state policies simultaneously, 'as beneficiaries, as victims and as participants'.[34] The vital importance of policy networks of private and political interests is the subject of Peter Lyth's study of the long-term impact of the creation of British European Airways as a public corporation in 1946.[35] As Lyth demonstrates, effective lobbying by the private airlines and surface transport companies, especially the 'Big Four' railway combines, ensured that they had a financial and management stake in the nationalised enterprise. The Labour Government simply refracted the plans of vested private interests through the rhetoric of public ownership. Unrealistic expectations of BEA's future profitability and levels of subsidy revealed a lack of strategic thinking which was a strand running through public policy concerning the aviation industry for decades to come. Lyth's main concern is to revise the wholly negative verdict on the aircraft manufacturers' performance in the 1950s. An inevitable result of BEA's focus on short-haul flights was relatively poor capacity utilisation, which in turn led to the corporation's indifference to the emerging jet technologies and its failure to stimulate development work by domestic manufacturers.

IV

Debates about the lifestyles of nineteenth-century business elites have been polarised between depictions of caste-like closure and openness, as the *nouveaux riches* attempted to emulate the landed aristocracy. In an elegant piece, F.M.L. Thompson considers the emergence of hybrid lifestyles which straddled bourgeois and aristocrat.[36] Nor was this a passing phase in the life-cycle of the *arriviste* industrialist. Rather, the combination of business wealth and landed estate was the recipe for transferring a family's economic and social power base intact across generations. 'Business fortunes, on their own, with no land', concludes Thompson, 'failed to perpetuate themselves'.[37] The public school has been invested with an almost mystical and wholly pernicious power to erode the profit-orientated psychology of entrepreneurialism. But as Berghoff demonstrates by drawing on his doctoral research into the business elites of Birmingham, Bristol and Manchester, fewer than one in five entrepreneurs attended one of these institutions.[38] Entry to public schools was, therefore, far from a universal facet of second-generation business families. Moreover, Berghoff argues that it was less gifted or younger sons who went to public schools, leaving their older or more able siblings to enter the family firm. Far from undermining the vitality of family capitalism, therefore, the public schools helped to ease inter-generational successions.

V

Part of the attraction of Chandler's institutional approach to corporate development was that it could be readily assimilated into business history's traditional narrative approach. The alacrity with which business historians leapt at Chandler's schema – and clung to it ever since – is testament not so much to its explanatory power but to the theoretical incoherence of business history itself. However, as Clive Lee points out in the first of his two theoretical articles for *Business History*, Oliver Williamson's transaction cost analysis is entirely consistent with Chandler's empirical studies of vertical integration.[39] For Lee, Williamson's arid economic approach offers business history the prospect of a coherent theoretical framework. Transaction cost theory rests on the uncontentious proposition that knowledge is always partial while behaviour is rational but limited, the net result being a conception of strategic planning as necessarily imperfect. All transactions should be organised to economise on bounded rationality while taking care to safeguard the firm against opportunism. The key to understanding the modern vertically integrated corporation is, therefore, a contracting rationale rather than releasing the potential of improving technologies. If the convergence of economic theory and business history advocated by Lee initially appears to offer the prospect of the entrepreneur returning to the centre-stage then he quickly dismisses such a prospect.[40] Lee damns entrepreneurial history as a blight on the theoretical development of the discipline. Entrepreneurial history 'lacks the analytical penetration needed to resolve the problems it has sought to explore. It has surely outlived its usefulness'.[41] Despite its ambition, Lee's review of the theory and history of corporate behaviour offers little beyond a theorisation of the current state of empirical knowledge built on Chandler's foundations. A more innovative departure would have been the actual use of Williamson's concepts to analyse an empirical case study, either of a particular firm or of an economic sector. The inherent weakness of defining the theoretical boundaries of business history through Williamson's work is that it mirrors the classic microeconomic focus on the individual enterprise. As several essays published in 1990 demonstrate, in sectors as diverse as cotton and copper refining long-term competitive advantage and disadvantage is derived not just from the characteristics of individual enterprises but also from the dynamic interplay of collective regulatory institutions in areas such as labour relations and technological diffusion.

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The Introduction of Scientific Management by the Mitsubishi Electric Engineering Co. and the Formation of an Organised Scientific Management Movement in Japan in the 1920s and 1930s

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The aim of the paper is to identify the most distinctive features of the introduction and development of scientific management in pre-war Japan by examining the case of the Mitsubishi Electric Co. The case study shows the following. First, American-style time study methods were introduced at the appropriate moment. Second, though these methods were applied to Mitsubishi directly, the method of wage-fixing was their own independent creation. This served to obviate industrial conflict. Third, innovators at Mitsubishi played a major role in the scientific management movement in pre-war Japan.

Formal scientific management,[1] as developed by F. W. Taylor in the 1900s and 1910s and improved upon by his successors, was introduced into Japan through the translation of their works in the early 1910s.[2] Time and motion study and scientific wage fixing methods came to be applied in shipbuilding, cotton spinning and government-run factories in an attempt to improve and rationalise the manufacturing process.[3] It seems that this sort of early application of scientific management methods to workshops succeeded, to a certain extent, in rationalising the manufacturing process.

In the 1920s some Japanese electrical manufacturers endeavoured to adopt formal or informal scientific management following technical tie-ups with foreign counterparts. Among these, Mitsubishi Denki Kaisha (the Mitsubishi Electric Engineering Co. Ltd) may be regarded as a typical case. However, business historians have not to date produced detailed studies on this topic; therefore distinctive features of the introduction of this sort of management technique into Japan in this period remain to be examined and explained. The main aim of this paper is to explore such features in the 1920s by examining the application of time

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and motion study and wage fixing methods in the Mitsubishi Electric Co.'s Kobe Works. The impact of scientific management at the Kobe Works upon the formation of organised scientific management in the early 1930s is also reviewed.

In examining the introduction of this sort of management technique, it seems important to note the significance of both external and internal conditions. First, the condition of the product market should be noted as one of the external conditions, not least because it is conceivable that both the level of demand for and supply of the product have, to a greater or lesser extent, an influence on the management's decision to pursue a managerial revolution. Second, the condition of the labour market should be considered as another external factor, though this influence is derived from that of the product market. In addition to these two factors, the development of industrial relations should be considered in terms of the 'mental revolution' which Taylor had repeatedly advocated. Finally, as an independent variable, we must consider the internal conditions, in particular the managers' and engineers' understanding of scientific management.

I

The enlargement of the product market

The Mitsubishi Electric Engineering Co. was founded in 1921; and introduced American-style management techniques following a technical tie-up with the Westinghouse Electric & Manufacturing Co. in 1923. At first it was the electric fan shop at the Kobe Works that applied time and motion study methods and a scientific wage fixing system based on the practice at Westinghouse.

The total value of output of electric fans produced in Japan rose from about 500,000 yen in 1917 (which accounted for 1.2 per cent of the total value of all electric products and related materials), to about 1 million yen (1.5 per cent) in 1918, and to about 3 million yen (4.3 per cent) in 1919. But during the depression after the First World War, the total output of electric fans fell to below 180,000 yen (2.1 per cent) in 1923.[4] In the early 1920s, the main electric fan manufacturers were the Shibaura Works Co., the Mitsubishi Electric Co. and the Kawakita Electric Co. They strove to establish a mass production system despite the adverse business circumstances. As a consequence, they drove high priced imported products such as those of the General Electric Co., Westinghouse, and AEG (Allgemeine Elektrizitäts Gesellschaft), out of the domestic market and began to export some of their production.[5] Immediately after the earthquake of 1923, the rapid increase in demand for domestic electric fans stimulated electric manufacturers to make even greater efforts to step up production. As a result total value of output reached 4 million yen (4.3 per cent) in 1925, which was the highest point in the Taisho Era (1912–26).[6] In expectation of a rapid increase in demand for domestic electric fans, Mitsubishi Electric produced 10,000 standard-type electric fans in 1921–23, and electric fans were also put into commercial production at a newly-established fan shop at Kobe Works in early 1924.[7]

It was necessary for Mitsubishi not only to accumulate know-how concerning cost accounting, process control, and electrical and mechanical engineering, but also to set up a planning and control division with the object of establishing a quantity or mass production system. In the process of functional specialisation and of improving managerial structure, the Kobe Works set up sections and subsections specialising in process and cost control: Kosaku-ka Kotei-kakari (the process control subsection of the engineering work section) and Genka-ka (the cost accounting section).[8] Nobuo Noda, who was a member of the Economic Research Department of Mitsubishi Goshi Kaisha (the Mitsubishi Holding Co.), presented a report, which is described later in detail, on the managerial structure of Kobe Works and Kairyo-ka which noted that:

> This section is one of the most distinctive characteristics of the structure of Kobe Works'... Its joint duties are to co-ordinate the junction between blueprint and engineering technique and to take charge of a part of the planning functions.[9]

Undoubtedly the establishment of this type of division or section was essential to enlarge the quantity or mass production system. In other words, it seems that this sort of organisational innovation was an internal condition necessary for the transfer of the newly-acquired management technique.

The radical labour movement and the decline of labour mobility

An active labour movement determined to obtain collective bargaining emerged in the Kansai region (Osaka and Kobe area) in the early 1920s. In July 1921, soon after Mitsubishi Electric was founded, the Yuaikai,[10] which was a central body of trade unions, started industrial action at the Kawasaki Shipyard, the Mitsubishi Kobe Shipyard, and the Kobe Works of Mitsubishi Electric, and this labour dispute lasted for over a month. In the case of Mitsubishi Electric, the management took decisive measures, with the dismissal of 81 workers and the suspension of 38 others, and thus settled the conflict between labour and management.[11]

At the initiative of the management, a Workshop Committee was organised as a co-operative body to mitigate the workers' grievances. The main matters considered by the committee were industrial efficiency and workers' welfare.[12] Thus the committee, which was set up as a reaction to an industrial dispute, came to play a major role in co-operation regarding the efficiency of production. It could be said that the establishment of this committee was a necessary precondition for change, in that its function was to alleviate the workers' opposition to the introduction of newly transferred management techniques.

In the meantime, the mobility of blue-collar workers in Japanese big business in heavy industries declined and the workforce increased in stability in the 1920s. Labour mobility at Kobe Works in 1923 was about 40 per cent. Thereafter it declined, and fell to about 30 per cent in 1925.[13] This tendency was an inducement to form an in-company promotion system and to make managers realize the necessity to regularise the standard of promotion and to rationalise the wage system.

Knowledge about scientific management

Thus it was that changing business circumstances brought about the organisational conditions necessary for the introduction of new management techniques. Of course, it was managers and engineers who perceived the necessity to react to external conditions. Their recognition and attempts to improve internal managerial conditions were the most important internal factors making for the smooth acceptance of new management techniques.

It was the engineer Kamekichi Honma who applied his knowledge to raise the efficiency of production. He was akin to 'an engineer as an economist,' as described by Henry Town, and carried out experiments to improve production control in co-operation with employees.[14] As a result of his efforts, output per day by one shaft-finisher rose from 42 in June 1923, to 70 in August 1924, and to an average of 72 in 1925. The output per day by one shaft-grinder rose from 147 to 222 over the same period.[15] In spite of some rate-cutting within the plant, Honma and those working with him did not meet with opposition from workers.[16]

On the administration side, Nobuo Noda, who had long known the literature on scientific management, carried out an investigation into management, including, among other things, labour management, process control, and cost accounting at the Kobe Works. According to his report, though there had been several types of wage rules at Kobe Works, most workers worked on piece rates based on 'the rule of payment by results' with no guarantee of regular daily pay.[17] The unit piece was fixed on the senior foremen's rough estimate based on their past experience and the senior foremen who were in charge of wage fixing were themselves paid a bonus based on a Rowan-type premium system.[18] With regard to this indirect wage setting, Nobuo Noda proposed the need to introduce time and motion studies for selected senior foremen.[19]

Thus the Kobe Works met the main internal condition in that it had both an engineer who was interested in the rationalisation of production engineering and a progressive-minded administrator who advocated the introduction of new management methods.

II

As we have seen already, with regard to both external and internal conditions, Mitsubishi Electric made arrangements for modernisation of management in accord with business circumstances. In these circumstances Westinghouse-style time study methods were transferred to Japan as part of a process of managerial revolution. This section investigates three areas. First, the process of transfer and the application of Westinghouse-style time study methods into Kobe Works as well as the contents of time study are analysed in detail in the context of the general development of Japanese production management. Second, the particular features of wage-fixing based on time study is considered. Third, the results of both time study methods and the resultant wage fixing are examined.

The transfer and application of time study methods

Following the technical co-operation agreement with Westinghouse in November 1923, Mitsubishi Electric decided to obtain information not only on manufacturing processes but also on shop management techniques and marketing arrangements.[20] To pursue this policy, Mitsubishi Electric despatched 60 engineers to Westinghouse immediately after the technical tie-up. Takeo Kato, who was Nobuo Noda's cousin, led others to investigate Westinghouse-style management techniques.

Takeo Kato was sent to Westinghouse immediately after the technical tie-up came into effect, and joined its apprentice course in 1924 to learn practical shop management methods including time study methods, process control and cost accounting.[21] After the completion of the course, he brought back to Japan a manual on time study entitled 'Time Study Procedure and The Use of Time Study'[22] and another on education for foremen. Honma and Noda turned their attention to the material on time study methods, and made good use of it.

In the summer of 1925, Honma, Noda and Kato decided to apply these time study methods using stop-watch methods directly to 349 different types of task in the electric fan manufacturing shop (about 90 workers, or roughly 7.5 per cent of the total workforce) at Kobe Works.[23] Before putting the methods into practice, Kato and his colleagues called the senior foremen together and told them that the standard time would be set not by measuring hard work but by measuring ordinary work which the average worker could carry out. Kato and the others persuaded them to communicate the aim of time study to their subordinate workers.[24] This sort of announcement, which paved the way for co-operation with the workforce, was as prescribed by the Westinghouse manuals, which noted that 'the aim of time study is to establish the standard time which average workers can ordinarily do at normal speed',[25] and that the explanation about time study 'should be given not to workers but to their senior foremen at first'.[26]

As a general rule, time study methods are put into practice after making basic arrangements which include the standardisation of working conditions and methods, and research into elemental motions. Though the Westinghouse manual said that motion study, which is the preparatory stage for time study, should be put into practice after the accomplishment of standardisation of both working conditions and the methods,[27] in practice the existing work at the electric fan shop was made the subject of time study with no special preliminary preparation. The reason given by Nobuo Noda was that there was no need to reform the existing work because past results had been recorded with precision – notably by Kamekichi Honma.[28] The existence of this accurate data helped to ensure that the introduction of time study did not provoke the antipathy of the workforce.[29]

Next, the contents of time study at Kobe Works will be examined so that its distinctive features may be clear. The standard time which was set consisted of the net time and the allowance time.[30] The net time was the measured time multiplied by a coefficient of levelling or rating of skill. Three skill classifications were used to set the net time.[31] On the other side, the allowance time was for reasonable delays. The allowance time was divided into two: the first category being the physical allowance for personal needs, fatigue, and so on; the second being an administrative allowance for sharpening tools, arranging belting and machines, and waiting for materials.[32]

It is well known today that labour science (*Arbeitswissenschaft*) is essential to form an accurate measurement of the allowance for fatigue. Though this type of approach to labour fatigue had been undertaken earlier by Gito Teruoka, who was the chief of Kurashiki Labour Science Institute, and by Kotaro Takahashi of the Ministry of Agriculture and Commerce,[33] it was not implemented at this time at the electric fan shop of Kobe Works. This indicates that time and motion study was not linked to psychological and physiological approaches, despite the development of industrial psychology and labour science in the mid-1920s in Japan and Western countries. As to the administrative allowance, the allowance-time for the work of assembling and grinding of tools was merely estimated and no allowance was made for exceptional work.[34] Thus though the analysis of allowance based on Westinghouse practice remained primitive, the standard time per unit was estimated through multiplying the selected time by the physical allowance and then multiplying the product by the administrative allowance. The daily standard output per person was calculated through dividing the nine-hour day by the standard time for each unit of production.[35]

Setting wage rates

Thus both the methods of time study adopted at the electric fan shop, and the procedure for calculating standard time which was based upon it, were direct applications of the Westinghouse system. However, whilst the calculation of wage rates was based upon time study and standard time measurement, it also reflected local conditions.

Before introducing the new methods of setting the unit wage, the Kobe Works laid down the principle of guaranteeing the present real income for each worker,[36] and preparatory inquiries into the actual wages paid at the Kobe Works had been made before the introduction of time study into the fan shop. Takeo Kato had also investigated the average real income of workers in similar types of industries, using Bank of Japan data.[37] It seems that he found that average wages were lower in the Kobe Works than in related industries, and it was further decided that new rates of pay should include an upward adjustment. The difference between Kobe Works rates and the industry average provided a yardstick for calculating the extra pay of three categories: female workers; male grinders; and all other male workers. The rate of extra pay for each category was set at: 130 per cent for female workers; 100 per cent for male grinders; 60 per cent for 'all other' male workers.[38] 'All other' male workers were subdivided into two classifications: senior male workers and general male workers. Senior male workers, general male workers and female workers (but not male grinders) were then divided further into 13 ranks according to workers' skill. Table 1 shows the applied wage system. To take a B_3 rank worker as an example, his guaranteed standard wage was based on his present real income plus the extra allowance to bring him into line with the industry average. They were 2.05 yen and 60 per cent respectively. The adjusted daily wage was thus estimated at 3.28 yen (found by multiplying 2.05 yen by 160 per cent). Assuming that the standard time per product unit and the daily work hours were 1.727

minutes and 540 minutes respectively, his daily standard output could be estimated at 310 (by dividing 540 by 1.727). His piece rate was therefore 0.0106 yen (found by dividing 3.28 yen, which was his adjusted daily wages, by 310).

Two distinctive features can be noted in regard to the method of setting piece rates in the electric fan shop of the Kobe Works. First, it is notable that the distinction between foremen and other workers was clearly defined. This had not been the case before the introduction of time study methods into the Kobe Works,[39] but the engineers and administrators used this opportunity to clarify the position before setting the piece rates. This innovation can be regarded as a manifestation of their keen desire both to rationalise the existing wage structure according to the workers' skill and experience, and to establish a clear promotion system to encourage workers who stayed long-term with the company. Second, it is worth noting that the existing real income of workers was not only guaranteed but also adjusted to accord with the average wages in the industry concerned. It is said that, when the new wage system was put into practice, workers, who tended to have misgivings about rate-cutting in general, did not complain of the new wage system; rather, they were willing to approve of it.[40] It may therefore be concluded that the reason why the new wage system was accepted by the workforce without difficulty is that the planning of the new wage system had taken the standpoint of workers into consideration.

TABLE 1

THE WAGE SYSTEM AT KOBE WORKS

	Grade	Range of Guaranteed Daily Wages	Guaranteed Standard Daily Wage	Rate of Premium	Daily Wages Plus Premium
Senior Male Workers	B_1	2.20–2.29yen	2.25yen	60%	3.60yen
	B_2	2.10–2.19yen	2.15yen	60%	3.44yen
	B_3	2.00–2.09yen	2.05yen	60%	3.28yen
General Male Workers	C_1	1.90–1.99yen	1.95yen	60%	3.12yen
	C_2	1.80–1.89yen	1.85yen	60%	2.95yen
	D_1	1.70–1.79yen	1.75yen	60%	2.80yen
	D_2	1.60–1.69yen	1.65yen	60%	2.64yen
	D_3	1.50–1.59yen	1.55yen	60%	2.48yen
	E_1	1.40–1 49yen	1.45yen	60%	2.32yen
	E_2	1.20–1.39yen	1.29yen	60%	2.07yen
Female Workers	W_1	0.80–0.89yen	0.85yen	130%	1.96yen
	W_2	0 70–0 79yen	0.75yen	130%	1.71yen
	W_3	0.60–0.69yen	0.65yen	130%	1.49yen

Source: Nobuo Noda, 'Time Study and Wage Setting at Kobe Works' (1927), pp.16–17.

Results of the application of time study and the new wage system

It is necessary to review what effect the application of time study methods and of the new wage system had on the practice of manufacturing electric fans. Table 2 shows the ratio of the time required under the revised system to the time formerly required – data which had been gathered by Honma and others. It is clear that the average time required was reduced by 24 per cent. Though efficiency, as measured by actual daily output as a ratio of standard daily output, was not recorded accurately, it was reported that while the efficiency of hand finishing was high, that of machine work was lower.[41] Furthermore it was reported that the income of workers grew by 20 per cent on average.[42] Subsequently both time study methods and the new wage system were extended to other workshops of the Kobe Works.[43] It might be said that it was natural that the efficiency of hand work rose, because the main object of time study was hand work, and that one of the reasons why the efficiency of machine work remained the same was that the techniques to save machine time, such as the adoption of REFA (*Reichsausschuss für Arbeitszeitermittelung*) methods in Germany had not been introduced into the shop at the same time.

Thus when Mitsubishi Electric put new management techniques into practice, the engineers and administrators revised the wage system to suit their labour conditions by taking changes in external and internal business conditions into consideration. This proved effective in avoiding the

TABLE 2
RESULTS OF TIME STUDY

Parts	Index of Standard Time Required for each Process
Motor	77%
Frame	68%
Stand	84%
Gear Box	72%
Stator	78%
Rotor	80%
Compensator	76%
Terminal Board	103%
Waffer	77%
Guard	70%
Average	76%

Source; Nobuo Noda, 'Time Study and Wage Setting at Kobe Works' (1927), p.30.

levels of resistance by workers to scientific management which had occurred in America in the 1920s. In that respect this consideration might be regarded as one Japanese-style feature in the process of the acceptance of American-style management techniques.

The application of time study methods to the production of electric fans gave a great impetus to modernise the process control as a whole at Kobe Works. The progress of manufacturing was indicated clearly by adopting the Gantt Chart system, so that the flow of work and the daily schedule became precise.[44] Furthermore, the data produced by time study was utilised as the primary material for cost accounting.[45] Thus, taking advantage of the results of time study, Mitsubishi Electric seized the opportunity to promote better production management.

III

The Mitsubishi Electric Engineering Co. was a pioneer in putting new wage setting systems based on imported time study methods into practice in Japan. Considering the relationship between labour management and production engineering, Mitsubishi Electric may also be regarded as a pioneer in labour management based on works engineering techniques. This section examines the impact of this pioneering work upon the scientific management movement which the government sought to encourage during the industrial depression of the early 1930s. Two aspects of this process should be examined. First, the diffusion of methods from Mitsubishi to the business community at large should be examined. Second, it is also essential to note the role played by key individuals from Mitsubishi in the process of diffusion.

Both Noda and Kato accepted invitations to lecture on time study methods at a meeting on work study held by the Ministry of Railways, which managed the national railway factories directly. An incentive wage system had been adopted at the railway factories as early as 1917–18, and there had been a considerable increase in efficiency. However, under cost pressures, managers there had to cut wage rates.[46] Factory managers had come to recognize the importance of accurate work study in the late 1920s so that they should avoid the harmful consequences of rate-cutting. So in 1929 they selected seven factories out of the total of 23, Ohmiya, Ohi, Hamamatsu, Takatori, Kokura, Tsuchisaki, and Naebo Works, which were to take practical charge of the experiments in work study. Okiie Yamashita, who held the position of the chief of the Engineering Department of the Ministry of Railways, and his fellow engineers intended to investigate work study thoroughly, including time study and motion study and the scientific wage system based on it. For this reason both Noda and

Kato were called upon by Yamashita to instruct them in time study methods.[47]

The time study methods of Westinghouse were, albeit for a short period, applied in the Kokura Works, which took charge of the investigation of time and motion study in casting and waste processing work. At Kokura Works the percentage selection method of Westinghouse was adopted for fixing times.[48] Elsewhere, factory managers and engineers continued to make efforts to systematise the existing methods, and eventually, in May 1930, they succeeded in unifying the methods used at each factory. The Navy Dockyard in Kure also adopted Westinghouse-style time study methods. In particular, the method of calculating workers' physical allowances which was applied there was identical to that of Westinghouse.[49]

Thus the time study methods adopted at Kobe Works were, to a certain extent, diffused into government-run factories, through the efforts of Noda, Kato and others. This process of diffusion, however, was modified by the way in which the scientific management movement was formed in Japan in the early 1930s.

In June 1930, the Committee of Production Management was set up as one of the committees of the Extraordinary Department for Rationalisation of Industry within the Ministry of Commerce and Industry in order to pursue investigations into production management – which formed part of the rationalisation movement advocated by the government. Kinpei Matsuoka, who was an advisor to the Extraordinary Department, commissioned Nobuo Noda to select suitable persons for the committee.[50] He selected engineers with experience in practical production management – leading figures such as Takuo Godo and Koichi Hidaka of Kure Arsenal, Takeo Kato, and Okiie Yamashita who was appointed chairman of the committee. It may be concluded that Noda's activities in the diffusion of scientific management methods outside of Mitsubishi had provided a good opportunity to communicate with other engineers with common interests.

In May 1931 Nihon Kogyo Kyokai (the Japan Industrial Association) was established for the purpose of diffusing scientific management methods. This association, which was composed of Kojo Kyokai or Kogyo Kyokai (Factories' Associations) set up in each prefecture after the promulgation of the Factory Act of 1916, published pamphlets produced by the Committee and distributed them through the channel of each Factories' Association.

It was Nobuo Noda and Takeo Kato who drafted the pamphlet entitled '*Sagyo Kenkyu (Work Study)*'[51] which through examples illustrated methods of time and motion study.[52] Though the greater part of this pamphlet sought to explain 'the standardization of work through time study', it is noteworthy that it also included points regarding industrial engineering methods which had developed in Western countries prior to the early 1930s, and practical approaches of labour science, like research on fatigue. For instance, instead of the percentage selection method, the arithmetical mean selection method was considered a better means of estimating of the net work time. In addition, Therblig methods invented by F.B. Gilbreth, a chart of machine time edited by REFA, and the results of fatigue research based on measurement of energy consumption at Kurashiki Labour Science Institute appeared in the pamphlet. This implies that almost all available subjects concerning work study which remained to be examined after the introduction of time study at Kobe Works were included in this pamphlet. Furthermore, another pamphlet entitled 'The Wage System'[53] is worth examining in respect of the development of a Japanese-style wage system. Two points described there are noteworthy. First, it is noted in this pamphlet that it is essential to make a thorough investigation into the minimum standard living expenses of workers.[54] Second, it is emphasised that, though it is necessary to introduce a sort of wage system based on job evaluation as a basis of an incentive wage system like the Halsey system or Rowan system, it is also necessary to guarantee workers' current real income.[55] With regard to the first point, data of the income and expenditure of workers at Kure Arsenal, the government-run railway factories, Yokohama Dockyard and Mitsubishi Nagasaki Shipyard were attached at the end of the pamphlet for reference. The latter point shows that it was written after the model of results at Kobe Works. It should not be overlooked that in the same way almost all recommendations made in the pamphlet were along the lines of results from the experiences of Kobe Works and other pioneering cases. From this it can be inferred that engineers who had charge of rationalisation of workshops took workers' minimum living costs into consideration to prevent worker unrest from compromising the adoption of new incentive wage systems. The fact that such considerations were taken seriously by administrators should be regarded as one of the distinctive features of wage rationalisation as a part of labour management in Japan.

Thus the engineers of Mitsubishi, who had succeeded in applying imported scientific management methods to the production process at Kobe Works, not only contributed to the organisation of the scientific management movement, but also integrated different experiences into their publications through interchange of information on the results of scientific management between themselves and other experts in other firms. The pressing task for this organised scientific management movement was to diffuse this practical information universally, though it is presumed that the extent to which it was diffused remained within given bounds.

With the introduction of time study methods at the Kobe factory it can be said that scientific management became a nationwide movement for the first time in pre-war Japan.

IV

A number of conclusions may be drawn. First, immediately before the introduction of time study methods into Mitsubishi Electric Co. the administrators at Kobe Works strove to modernise the manufacturing process and labour management. As they sought to respond to changing business conditions – an expanding product market, the emergence of an organised labour movement and declining labour mobility – they became aware of the need for scientific management methods. Thus it was an opportune moment for the introduction of Westinghouse-style time study methods.

Second, though time study methods were directly applied to the electric fan workshop, the wage rates which were derived from it took into account average standard wages in the industry as a whole. It might be said that such a consideration, together with the establishment of the Factory Committee, served to obviate industrial conflict. It should be noted that adopting a conciliatory measure such as this toward workers on the introduction of foreign management techniques was a common feature of that period in Japan.

Third, the time study methods applied at Kobe Works came to be a factor not only in managerial innovation in the firm but also in providing other companies with useful information. Innovators at Mitsubishi Electric such as Noda and Kato came to play a major role in making arrangements for the formation of the government-inspired scientific management movement of the early 1930s. Though it seems that the main aim of the movement was to diffuse data from a range of practical experiments, the pioneers of Mitsubishi played a key role at this stage. Since the Mitsubishi Electric Co. produced organisers of the scientific management movement in Japan, and so helped to set the pattern for labour management based on work engineering techniques, it might be said that the introduction of time study methods into Kobe Works was an event of great significance in Japanese management history.

NOTES

1. This term is according to a suggestion made by Dr. Howard F.Gospel of the University of Kent. He draws a distinction between 'formal' and 'informal' scientific management as follows. 'Formal' scientific management means systematised, formally advocated and stereotyped management methods. The Taylor system, the Halsey system, Rowan system, the motion study methods invented by F.B. Gilbreth and so forth come into this category. 'Informal' scientific management means gradual improvement in management systems and in production engineering. It seems that, for instance, Japanese-style *Kaizen* comes into this category.
2. Early Japanese versions of the works by Taylorists are as follows. Ohkabe Hayaji, *Teru-shoryaku Kojo-kanriho Zen (New Shop Management to Eliminate Trouble*) (Tokyo, 1912). This is the first literal translation into Japanese of selected passages of *Motion Study*, written by F.B. Gilbreth in 1911. Yukinori Hoshino, *Gakuri-teki Jigyo Kanri-ho (Scientific Business Management*) (Tokyo, 1913). This is the first word-for-word translation of selected passages of *Principles of Scientific Management*, written by F.W. Taylor in 1911.
3. Among the state-owned enterprises, the Japanese National Railway and the Navy Dockyard in Kure are the foremost examples. See Takuo Godo, 'On Some Experiments in the Scientific Management of Machine Shops', *Proceedings of the World Engineering Congress*, Vol. XXXVIII (Tokyo, 1931); Okiie Yamashita, 'On the Method of Rolling Stock Repair at the Japanese National Railways', *Proceedings of the World Engineering Congress*, Vol. XVI (Tokyo, 1931). Recently Professor Eisuke Daito has given a detailed analysis of this subject. See Eisuke Daito, 'Railways and Scientific Management in Japan, 1907–30', *Business History*, Vol. XXX No.1 (1989), pp.1–28.
4. Teishin-sho (Ministry of Communication) (ed.), *Denki Jigyo Yoran (A Survey of the Electrical Products Industry)*, each year from 1914 to 1926.
5. Hibi Shigeyoshi (ed.), *Nihon Denki Kogyo-shi* (*The History of the Japanese Electrical Engineering Industry*), (Tokyo, 1956); Ministry of Agriculture and Commerce (ed.), *Syuyo Kogyo Gairan Dai-san-bu* (*Report on Main Industries, Part III, The Machine Industry*), (Tokyo,1922).
6. *Denki Jigyo Yoran*, each year from 1914 to 1926.
7. Mitsubishi Electric Engineering Co. (ed.), *Kengyo Kaiko* (*Remembrances of Establishing Enterprises*) (Tokyo, 1951), pp.239–42.
8. Ibid., p.52; also see *Mitsubishi Denki Sha-shi* (*60 Years of the Mitsubishi Electric Engineering Co.*),(Tokyo, 1983), p.694.
9. Nobuo Noda, *Mitsubishi Denki Kabushiki-kaisha Kobe Seisaku-sho Keiei Soshiki* (*An Investigation and Report on Managerial Structures at Kobe Works*) (1923), p.4.
10. Yuaikai, which was named after the Friendly Society, was founded by Bunji Suzuki in 1912 and was renamed Sodomei, the Japanese Federation of Labour, as a central body of trade unions in 1921.
11. *Remembrances of Establishing Enterprises*, pp.79–80, also *60 Years of the Mitsubishi Electric Engineering Co.*, pp.319–22.
12. See Mitsubishi Goshi Shiryo-ka (Economic Research Department of the Mitsubishi Holding Co) (ed.), *Kojo Iinkai no Seiseki* (*Proceeding of Factory Committee*), *Shiryo I-ho* (*Report on Miscellaneous Information*), No.113 (1923).
13. Labour mobility = (the total sum of the number of monthly hired workers + the sum total of the number of monthly fired workers) + (the average number of employees throughout the year). Numerical data were taken from *Monthly Circular of the Mitsubishi Electric Engineering Co.* for 1921–26.

14 Nobuo Noda, *Kindai Nihon Keiei-shi* (*Modern Japanese Business History*) (Tokyo, 1988), p.539.

15 Nobuo Noda, 'Kobe Seisaku-sho ni okeru Jihan Kenkyu to Chinritsu Settei' ('Time

Study and Wage Setting at Kobe Works'), Mitsubishi Goshi Shiryo-ka (ed.), *Shiryo I-ho (Report on Miscellaneous Information)*, No.286 (1927), p.1.

16 Nobuo Noda, 'Kagaku-teki Kojo Keiei no Kenkyu' ('Research on Scientific Shop Management'), Mitsubishi Goshi Shiryo-ka, *Shiryo I-ho (Report on Miscellaneous Information)*, No.69 (1923), p.6.

17 Ibid., p 5.

18 Ibid.

19 Ibid., p.6.

20 *Remembrances of Establishing Enterprises*, p.68.

21 Takeo Kato, 'On Industrial Engineering – My Experience and View', Nihon Shoken Tohshi Kyokai (The Japanese Association of Securities Investment) (ed.), *PR*, Feb. 1958.

22 This material was translated into Japanese by both Noda and Kato. This version entitled 'Jikan Kenkyu Jisshi-ho' ('The Way of Time Study') was printed in *Shiryo I-ho (Report on Miscellaneous Information)*, No.267 (1926).

23 These tasks were divided into seven different types of work, that is, 92 miscellaneous tasks, 44 basic tasks, 11 wiring tasks, 149 finishing tasks, 26 assembling tasks, 12 packing tasks, 15 grinding tasks. See 'Time Study and Wage Setting at Kobe Works', p.18.

24 Ibid., p.3.

25 'The Way of Time Study', p.1.

26 Ibid., p.5.

27 Ibid., p.9.

28 'Time Study and Wage Setting at Kobe Works', pp.2–4.

29 'On Industrial Engineering', p.15.

30 'Time Study and Wage Setting at Kobe Works', pp.7–12.

31 The adopted coefficient of skill at electric fan shop is as follows:

Degree of Skill	Coefficient of Skill
workers with below average skill	20–30 per cent
workers with average skill	30–50 per cent
workers with above average skill	50–70 per cent

'Time Study and Wage Setting at Kobe Works', p.9.

32 The adopted rate of human (ergonomic) allowance and the rate of administrative allowance are as follows:

Contents of Work	Rate of Allowance
ergonomic allowance	
hand work	25 per cent
mechanical work	20 per cent
automatic machine work	10 per cent
administrative allowance	10–15 per cent

'Time Study and Wage Setting at Kobe Works', pp.11–12.

33. See Satoshi Sasaki, 'Scientific Management Discussion at World Engineering Congress in Tokyo in 1929', *Bulletin of the Graduate School of Meiji University*, No.226 (1987).

34. 'Time Study and Wage Setting at Kobe Works', p.12.

35. Ibid., p.22–3.

36. Ibid., p.15.

37. 'On Industrial Engineering', p.14.

38. 'Time Study and Wage Setting at Kobe Works', p.16.

39. Ibid., p.16.

40. Talk by Nobuo Noda, 'Kagaku-teki Kanri-ho kara Seisan-sei Kohjo Undo e' (From the Scientific Management Movement to the Productivity Improvement Movement), in

Japan Business History Institute (ed.), *Keiei to Rekishi* (*Business and History*) No.9 (Tokyo, 1986), pp.5–6.

41. 'Time Study and Wage Setting at Kobe Works', p.31.
42. 'On Industrial Engineering', p.14.
43. *Remembrances of Establishing Enterprises*, p.369.
44. See Committee for Production Management of the Ministry of Commerce and Industry (ed.), *Sagyo Kohtei Kanri no Kaizen* (*The Improvement of Manufacturing Processes*) (1934), pp.97–108.
45. *Remembrances of Establishing Enterprises*, p.333–4.
46. Ken'ichi Shinozaki, *Naichi oyobo Chyosen ni okeru Kojo Chin'gin Seido no Chohsa Kenkyu* (*A Survey of Factories' Wage Systems in both the Homeland and Korea*) (The South Manchuria Railroad, 1932), pp.13–102; Committee for Production Management of the the Ministry of Commerce and Industry (ed.), *Sagyo Kenkyu* (*Work Study*), (1936), pp.138–76. See also Daito, 'Railways and Scientific Management in Japan, 1907–30', pp.17–20.
47. According to a memorandum by Noda, they provided guidance to railway shops on three occasions: 4–5 July 1929, 9–11 December 1929, and 12–15 March 1930.
48. *A Survey of Factories' Wage Systems in both the Homeland and Korea*, pp.30–38.
49. *Work Study*, p.48.
50. From the Scientific Management Movement to the Productivity Improvement Movement, pp.6–8.
51. *Work Study*.
52. 'On Industrial Engineering', p.15.
53. Committee for Production Management of the Ministry of Commerce and Industry (ed.), *Chingin Seido* (*Wage System*) (1932).
54. Ibid., pp.9–13.
55. Ibid., p.35.

From Licensor to Multinational Enterprise: The Small Dutch Firm Océ-van der Grinten in the International World, 1920–66

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This article gives a long-term analysis of the international activities of a Dutch firm. It demonstrates that a very small firm can play its part in international business. Lacking financial resources and managerial experience, the firm initially chose a policy of licensing to exploit a technological advantage. Over the years, the licensing option placed the firm in a vulnerable position. Therefore, in the 1960s the company switched partially to a policy of foreign direct investment. The transformation into a multinational enterprise was a very gradual process, so gradual that it is difficult to determine the precise moment the firm can be termed a multinational enterprise.

In the past decade, business historians have devoted much energy to the study of the European multinational enterprises. Company histories provided new evidence and several congresses stimulated the international debate.[1] While Germany had its fair share, most attention was paid to Britain. The Dutch contributed little to the debate. The intention of this case study is to highlight one Dutch company and to shed light on another relatively neglected area, the small firm.[2] Though there is ample evidence that small firms can embark on an international career,[3] most attention still goes to the larger concerns.

Was the internationally operating Dutch firm Océ-van der Grinten really a multinational enterprise? It depends on the definition of a multinational enterprise, a question far from clear. The oldest definitions take as starting point a concern with foreign production units in at least five or six countries. Indeed the concept of the multinational enterprise is commonly associated with large concerns with production units in many if not all important countries. Historians trying to trace the historical roots of the multinational enterprise have confused the matter and called for a broadening of the definition. Mira Wilkins described the 'free-standing firm' with a board of directors and a secretary based in the home country and with production units only in a foreign country. Nicholas argued that

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the importance of multinationals was often under-rated because foreign agents and sales organisations were not seen as foreign direct investment. As historians do profit from a comprehensive definition to make it easier to trace the historical roots of a phenomenon, the most commonly used definition of the multinational enterprise is a firm that: 'owns and controls income-generating assets in more than one country'.[4] This definition links the multinational with foreign direct investment; in fact both concepts are often used as though these are interchangeable. In the 1930s Océ-van der Grinten invested money in the acquisition and protection of foreign patents. The firm also possessed a foreign production unit for two years, but not until the 1960s did it acquire several subsidiaries, and so could be called an multinational enterprise according to all definitions.

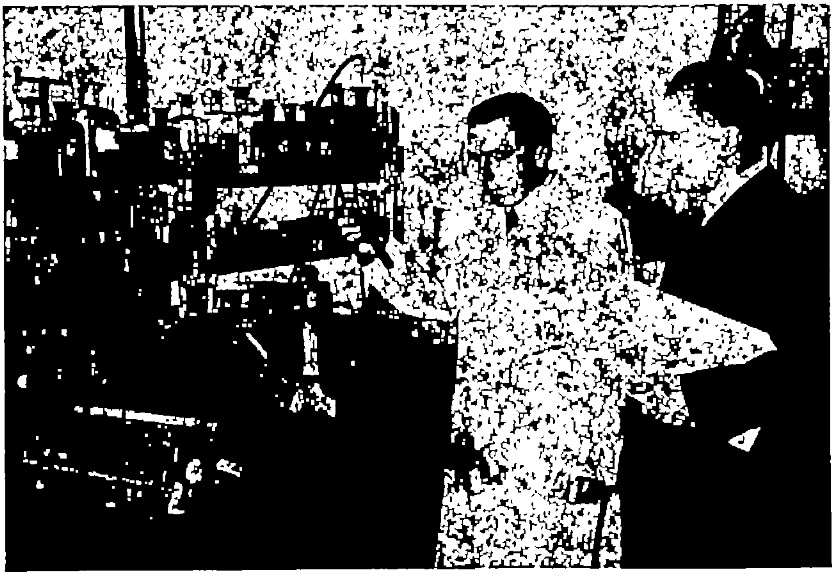
In historical research about the multinational enterprise extensive use has been made of internalisation theories. The emergence of the multinational company was understood as an organisational innovation. In order to economise on transaction costs, companies replaced the market by foreign direct investment. Firms and markets had to be regarded as alternative governance structures.[5] With the help of Wilkins' historical evidence, Nicholas showed that between the hierarchical organisation of the firm and the market there were several other options open to a firm to shape its international contacts. The question is why one option was chosen in a certain period and why the chosen mode was changed over time. Nicholas put forward a model to analyse the transition from the use of a sales agent to the establishment of a sales office and from there to the founding of production units.[6] It is equally interesting to analyse the transition from licensor to multinational enterprise. In fact, several writers have argued that more attention should be paid to the licensing agreements and other contracts, which served to organise international business contacts as an alternative to multinational enterprise.[7] M. Casson has invited historians to compare the strategies adopted by the same firm over different periods of time.[8] The firm Océ-van der Grinten provides an appropriate case to make such an analysis. The motivation behind a policy of licensing in the inter-war years will be compared with the arguments for foreign direct investment in the 1960s.

I

Océ-van der Grinten

The roots of Océ go back to the nineteenth century. Around 1877, a pharmaceutical chemist in Venlo, Lodewijk van der Grinten, started the manufacture of butter colouring agents as a sideline of the pharmacy. His son Frans put production on an industrial basis, while Frans' son, Louis, started the company's document copying activities in 1920. Two of Louis' brothers, like him doctors of chemistry, joined the company: Piet in 1923 and Karel in 1925. By that time there were about ten employees and three directors (the three brothers). Their chemical knowledge was acquired at foreign universities. While studying in Germany and Switzerland they formed life-long friendships with several scientists. In business they often put those friendships to good use, always prepared to return the favour. In the inter-war years a network of licensees was created. The motives behind this policy are analysed later.

Until 1956, the three brothers were the only managing directors. In that year the firm was still a comparatively small one, with no more than 400 employees, but with about 40 licensees in all parts of the world. Louis was responsible for patents, licensing contracts and other legal matters, while Karel was production manager, visiting foreign markets and concerning himself with personnel policy. Both Louis and Karel headed the research in the copying field. Piet took over from his father the factory producing the butter colouring agents and he was also responsible for all



Louis van der Grinten (on the right) and his brother Karel at work in their laboratory in the twenties.

financial matters. The brothers conferred with each other in a very informal way, often using the telephone or a scribbled note to come to a decision. But it functioned very well, because they trusted each other to know best in their own field. Lines of communication were very short. High efficiency was possible because research, development and marketing were closely linked. In fact, all links came together in one person: Karel van der Grinten.

In the first years there was no formal division between the production of butter colouring matter and the copying activities, but under threat of legal action a separate limited company was set up in 1928 to take care of the copying business.[9] The division was a formality only; both firms were treated as one family company. In financial matters the policy of the family was very conservative, ploughing back profits and avoiding the use of long-term bank loans. Even short-term loans were used sparingly. The best known trademark, Océ, was introduced in 1930 and later became the trade-name for the whole concern. In 1956 an outsider, Dr J.M. van Susante, joined the brothers on the board. He arranged for the introduction of Océ shares on the Amsterdam Stock Exchange in 1958.[10] It was the beginning of a period of unprecedented expansion. In 1966 there were five foreign subsidiaries and the Océ group employed 2,300 people, compared to 400 in 1956. In the inter-war years the firm's turnover had risen from f 0.5 million in 1920 to f 1.2 million in 1939. Now the company's turnover rose from f 18 million in 1956 to f 120 million in 1966. In 1990 it amounted to f 2,327 million.[11]

II

The Dutch Firm Océ-van der Grinten and the copying market

Océ-van der Grinten made its first entry in the copying market with blueprint paper, which in the 1920s was commonly used for the reproduction of line originals, such as tracings. The result was not a real black and white copy, but a blue paper with the drawing in white lines. The main users of blueprint paper were the design and engineering industries. It required some chemical knowledge to fabricate blueprint paper, but this knowledge was then widespread. Louis van der Grinten succeeded in making paper of a quality that caught the attention of the US firm Charles Bruning.[12] In those years it was not uncommon for an American firm to look to Europe for chemical knowhow; German companies dominated world output in chemicals, especially in dyestuffs.

In 1923 the important German firm Kalle & Co. introduced something new: a copying process nearly as simple and as cheap as the process to make blueprints, yet producing positive copies: coloured lines on white paper.[13] This process, based on the use of diazo compounds and azo coupling components, was called the 'diazotype printing-process', later shortened to 'diazo-process' or 'dyeline system'. Kalle patented the new copying process, trademarked 'Ozalid', in many countries.[14] As the new process seemed to threaten the use of blueprint paper, Louis van der Grinten tried to interest Kalle in a licensing agreement, but failed.[15] Then Louis developed his own diazo-process. In 1926 Van der Grinten introduced its 'Primulin paper' and applied for patents in many countries that seemed important at that time. Everywhere firms turned up with copying systems that resembled the work of Kalle, yet tried to circumvent his patents. For that reason Kalle was very keen on defending his rights. The Van der Grinten family did not really want to start a battle, as theirs was such a small firm in comparison with Kalle – which became part of the IG Farben concern, founded in 1925. The family, however, was prepared to fight back if necessary. A separate company with limited liability was set up to offset the risk of legal action, while the introduction of the disputed process continued. Kalle opposed the Van der Grinten patent applications, and contested the sale of Primulin paper in court. In The Netherlands, Germany, Norway and the USA writs were issued against Van der Grinten and its licensees.[16]

In the meantime Louis and Karel worked very hard to find a better copying system, that was more independent of the Kalle patents. When they succeeded in making several improvements as well as inventing a somewhat different process (the so-called semi-dry diazo process) they got Kalle interested in ending the hostilities and coming to terms. In 1928 the two firms started negotiations, which continued for years. In the meantime the legal proceedings were delayed and the claims later fully withdrawn. In the course of the negotiations Kalle recognised the semi-dry process, which was sold under the trademark 'Océ', as a process outside the Kalle patents. Van der Grinten withdrew Primulin paper in 1931. The two firms concluded agreements over patent exchanges and the division of markets.[17] Despite the many formal and informal contacts between the two firms, both parties remained strong competitors. Their most important battlefield was the patent office, while in the market they tried to protect their common interest against other competitors by co-operation. Competing firms in the field of dye-line systems were for instance the German firms Spang & Co. and Renker, the French firm Gay, the Swiss firm Erni Leuch and the English firms Hall & Co. and Harding & Co. All these firms, like Océ-van der Grinten itself, were small compared with Kalle.

In the chemical industry, patents played an important role.[18] The managers of Van der Grinten fully realised the importance of patent protection as their small firm had no economic power as such. Van der Grinten was very active in obtaining and defending its own patents and opposing the patents of competitors. Between 1930 and 1939 four per cent of its turnover was spent yearly on patent registration and legal battles.[19]

Louis and Karel van der Grinten conferring in a friendly atmosphere with Kalle employees at Wiesbaden (Germany).

In the 1930s Van der Grinten made important improvements to the semi-dry copying process. The use of the diazo paper required exposure and developing machines. These machines were designed by Van der Grinten, but built by a Venlo machine shop. All kinds of special copying materials were developed, such as transparent paper, film and linen coated with diazo. In the first place, the research effort was directed to improve the quality of the print and broaden the range of uses. This was important because the firm had no monopoly for diazo paper, despite its patents. Only its own special quality was protected. In the second place, a lot of money and research effort were spent on a revolutionary invention: a fine screen reflex system (under the trademark Retocee) to make copies of books and letters with the help of the same diazo materials as the Océ process. Technically, the new process was rather complicated, not only for the makers but also for the users. Commercially, it was very promising, because it was relatively cheap in comparison with making photographs, almost the only alternative to making copies of books at that time.

The new process, which was intended for office use, had some success in The Netherlands.[20] The Second World War, however, delayed its international introduction. After the war, Kalle was incapacitated for several years, but new competitors were turning up. In the office market Van der Grinten encountered strong competition from several copying systems based on photo-chemical papers (copyrapid), introduced in the 1950s by big concerns such as Kodak and Agfa. These systems as well as the Van der Grinten Retocee system disappeared after the breakthrough of Xerox' electrostatic copiers in the 1960s.[21] To keep its place in this market, Van der Grinten now had to borrow the technology from the USA and to develop its own electrostatic copier. In 1973, Océ was the first independent European company to design and produce its own plain paper copying system. In the drawing and engineering industry the Océ diazo process, improved over the years, remained very important.

III

Building up a network of licensees

Over the years dozens of patents were registered in countries all over the world. On this solid base a network of licensees could be built. Why was a policy of licensing chosen instead of export? This decision had partly to do with patent law. In many countries, though certainly not in all, the patent holder had to work his patents in that country or to give someone else a licence to do so. In practice, it is doubtful if the firm really would have been forced to exploit its patents or to give a licence to an interested party.[22] However, Louis and Karel van der Grinten believed in the validity of the patent regulations and acted accordingly. But they also had several other reasons for preferring separate production in the various countries. Sometimes it was cheaper to export chemicals than finished products. More important, however, was the fact that in the beginning the shelf life of the copying paper was limited; production near the customer therefore had distinct advantages. Of course, they could still have chosen a policy to establish their own foreign production units instead of licensing others; their own Dutch plant was highly efficient.[23] However, their financial means did not stretch that far and their managerial experience was limited. They lacked the necessary marketing knowhow.[24] How unsure Louis van der Grinten was about his own commercial talents is shown by the following quotation from a letter to Charles Bruning in New York:

> As you know it is our idea, to remain chemists and technicals [sic], and not to try to become businessmen ourselves, as we know very well this being for us a great trouble without promising great succes perhaps. Out of this, you will understand also, how we feel about cooperation with you, and we hope you will see your own good interest in this cooperation.'[25]

This assessment of his own capabilities was probably not without foundation. Louis and Karel were scientists at heart and had great pride in their research efforts. They delighted in co-operating with other people who were equally eager to make a perfect copying paper, but they disliked being salesmen themselves, visiting clients to fight for orders.

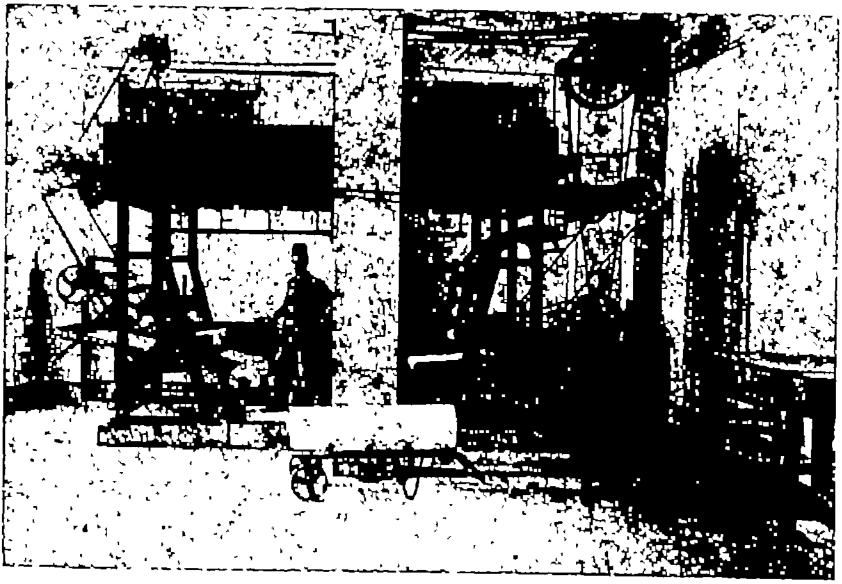
They therefore tried to find an interested party in each country. They sought the co-operation of firms accustomed to the manufacture of blueprint paper, as the coating of diazo paper was not very different from that of blueprint paper. Agreements with licensees often had the following content: the licensee got the right to manufacture the Océ diazo paper under the Van der Grinten patents. He had to buy the necessary chemicals from Van der Grinten. The recipes of the chemical mixtures remained a secret, even to the licensees. Part of the royalty payment was included in the price of the chemicals. Van der Grinten promised to supply the knowhow about the coating and to provide assistance when necessary.[26] Often the transfer of technological information went beyond the limits of the patent registration. The licensee had to protect the Van der Grinten patents in his own country, and could count on the assistance of Van der Grinten, though the latter would not pay any financial claims. (In reality, however, Van der Grinten and the licensee often shared the cost of litigation.) With some licensees a close collaboration developed. Over the years business and friendship mingled and Van der Grinten used to talk about its licensees as 'members of the Van der Grinten family'.

With blueprint paper Van der Grinten had entered into his first knowhow contract with the New York firm of Charles Bruning in 1923.[27] The results of their co-operation were not very promising. Bruning was considering terminating the contract when Van der Grinten caught his attention with a new positive copying process in 1926. The American firm immediately became enthusiastic and began to introduce the new system and build the necessary machines, notwithstanding the uncertainty of the patent position. Trade did not wait for patent legal action.[28]

How did a small Dutch firm, located in a small Dutch town near the German border, find the firms most suited to its purposes? Karel gathered names and addresses in several ways. First he asked his supplier of coating machines, the German firm Koebig, for the names of its clients. For the rest he assembled addresses through embassies, chambers of commerce, directories and, of course, his personal friends. The next step was very simple: Karel van der Grinten travelled to the most important cities in Europe, and later on to other parts of the world as well, and visited the more important producers of copying papers. On the spot he inspected the production units and spoke with the executives. Van der Grinten wished to link itself with firms big enough to put some capital into exploiting the product, and prepared to risk patent litigation. Yet more important was the enthusiasm of the managers. Karel van der Grinten inquired through local banks and merchant houses for details of firms, but relied mostly on his own judgement of people.[29] Yet choosing a licensee was rather risky: a short-lived licensee could become a life-long competitor,[30] as Van der Grinten experienced in Germany.

With the German firm Renker, specialising in the production of copying papers, a long-term agreement was reached for the production and sale of Van der Grinten Primulin paper. Louis and Karel thought they had found in the firm Renker an ally against Kalle, as both parties were interested in thwarting the latter's monopolistic position. But during a legal battle against Kalle in the German courts in 1927 Renker acted independently, selling his own diazo paper notwithstanding the terms of the agreement. So Louis van der Grinten came to the conclusion that the contract between his firm and Renker was no longer operating. During 1928 Louis had more or less urged Renker to sign a new contract, while Renker held back. In 1929, however, both parties changed tactics. Louis stated that as the new contract was never signed there was no contract at all, while Renker was of the opinion that the old contract was still valid. The unspoken reason behind these changes in tactics was that Louis had the opportunity to sell his German patents for a good price to Kalle, and that was probably just what Renker wanted to avoid. Renker took the case to a German court and Louis learned the hard way that contracts can backfire. After several years of litigation the question was still undecided, so Louis compromised by selling all his German patents to Renker in 1933. Max Renker praised Louis for his 'heroic decision' in ending the conflict. Three years later, however, Renker refused to pay part of the agreed sum of money.[31] Louis saw no point in starting new legal action in Nazi Germany and dropped the matter. Thereafter, though, Louis ensured that the licensing contracts were formulated with the utmost care, sometimes to the despair of his brothers and legal advisers.

The Van der Grinten policy was to give exclusive rights to one firm in every country. In this way the national boundaries of patent law were followed. An interesting feature is that their patents and knowhow had enough quality to interest foreign producers, not only in relatively backward countries in Eastern Europe, but also in the USA, Germany, United Kingdom, Switzerland and Sweden. At the beginning of the 1930s Van der Grinten had entered into contracts with firms in most European countries such as Germany, Great Britain, Switzerland, Czechoslovakia, Poland, Norway, Belgium, Sweden, Denmark, Finland, Italy, and France. It also contracted with firms in Latin American countries, such as Mexico and Argentina. In the late 1930s it moved on to Egypt, Turkey, Palestine, Australia, China, India, Indonesia and Japan. Initially, some licensee firms were larger than Océ-van der Grinten itself, but in later years the reverse was more usual.



A coating unit could be quite simple. This is the coating machine of the Egypt licensee Buccellati in 1933.

In small markets, Océ had only a distribution contract. Sometimes it started in a certain country with a distributor and, when business went well, tried to interest the sales agent in taking responsibility for local production.[22] But as production and marketing required a different approach, not all sales agents were prepared to become producers. For that reason in some countries Van der Grinten had an 'exclusive' sales agent alongside an equally 'exclusive' producer. If the two of them could not work together in harmony, Van der Grinten had to settle all kinds of arguments. Wherever possible, therefore, it was deemed preferable to combine production and marketing.

In Italy the distributor, Gerstung, was not inclined to set up a coating unit, nor could he find someone willing to do so. He therefore suggested to Van der Grinten that it should start its own Italian subsidiary. Although inexperienced with the running of a foreign production unit, Karel went to Italy to organise a small coating unit.[33] The unit needed only a trained operator for the coating machine assisted by a couple of local labourers. A friend of the family came along occasionally to discuss matters with the operator and the distributor. However, it did not work that way. When Karel was on the spot the production moved smoothly, but the moment he turned his back, all kind of problems arose. The Dutch operator lacked authority over the Italian labourers and moreover soon became homesick. Things were no different with the second Dutch employee sent to Italy. After a year of poor results, the experiment was abandoned.[34] Another costly lesson was learned.

The licensees made only the bulk product (Océ paper). The special products developed by the firm in the 1930s were too complicated to produce locally, so these were imported from Holland. The exposure and developing machines were sometimes made locally, sometimes bought from Océ-van der Grinten. The licensees were regularly visited, before the war mostly by one of the Van der Grinten brothers themselves. They conferred about production problems and market possibilities. Often Karel van der Grinten visited important customers as well, in this way learning much about foreign markets. The international business was blossoming when the Second World War threatened to destroy everything.

The brothers were seriously concerned that the Netherlands would become involved in the war. An employee was therefore sent to the USA in 1939 to make provision for the manufacture of chemicals over there in case of war. Notwithstanding their friendly relationship with Bruning, the brothers did not turn to this firm for the manufacture of their chemicals because the recipes were considered top secret: the licensees were forbidden by contract to produce their own chemicals, so Van der Grinten had to make sure the delivery of chemicals could be continued even in times of war. A German friend, Frank Guthery, who as a Jew had fled Germany and made his way to the USA with the help of Van der Grinten, was prepared to make the necessary chemicals and sell these to the licensees should contact with The Netherlands become impossible. For that purpose Guthery and Van der Grinten founded the Guthery Company for Van der Grinten Products. Guthery was no licensee, but an agent with a salary and a share of the profits. By necessity, he had to act rather independently. As Guthery and the Van der Grinten family were such good friends, they made no haste with the necessary legal agreements, leaving it all to Guthery to see to their interests. When the Low Countries were occupied by the German troops in 1940, part of the Van der Grinten business could be carried on from the USA.[35] During the first war year some contact was possible, but after 1941 international letters became fewer and fewer as the years went by. To send goods and money was even more difficult, so nearly all international trade ended. Production for the Dutch market was still possible, though paper and other materials became scarce. Some extra effort was put into research activities. In September 1944 Venlo became a battlefield and part of the population, including several members of the Van der Grinten family, was forced by the Germans to leave town. From that moment production and research ceased altogether.

IV

Rebuilding the international network after the Second World War

After five years of war the firm was in terrible shape. The factory lay desolate after eight months of disuse and contacts with most of the licensees had been cut off. Luckily, it soon became apparent that its friend and agent Guthery had done a good job. During the war Guthery had delivered chemicals to all licensees that could be reached from the USA. He had found several prospective licensees and the Guthery Company for Van der Grinten Products had realised a good profit, part of which was due to Van der Grinten. This money was used to buy chemicals and other scarce products for the Dutch business in the USA.[36] Gradually, the business transacted by Guthery on behalf of the Van der Grintens was taken over again by the Dutch plant. Guthery built up a business of his own in drawing office machinery.

In several countries the firm's patent rights and royalty income had been confiscated by the national governments. After the war, in most instances, as in Great Britain and Canada, the rights were returned as soon as the officials had ascertained that the Van der Grinten family had not traded with the enemy. Not so in the USA. During the war, the Alien Property Custodian, later transformed in the Office of Alien Property (OAP), had confiscated 14 Van der Grinten patents and collected the royalties from its licensee Bruning, who had paid some $100,000 'under protest'. After the war the Van der Grintens filed a claim to get back their patents and money. First the Office of Alien Property (OAP) had to be convinced that they had behaved loyally during the war and also that they were at that moment not trading with some specified countries of the communist bloc! When the necessary papers had been handed in, the USA authorities suddenly brought up a new argument, 'the interest of the United States'. Van der Grinten was informed by the Office of Alien Property that according to government regulations: 'no property may be returned unless it is found that return is "in the interest of the United States" '.[37] This argument had nothing to do with the former reason for confiscation, but it was a consequence of the USA anti-trust policy. Certain provisions in the old agreements between Bruning and Van der Grinten were found to be inconsistent with the anti-trust policy of the United States. Even the newly formulated agreements could not satisfy the authorities. The US legal advisor of Van der Grinten agreed with the judgement of the OAP on one small point only. About the other criticisms, he wrote: 'All other points and demands with respect to the

The Océ trademark was registered in 1930; these stickers were used as a reminder to all customers.

existing agreements are so unjustified and so dictatorial that I am embarrassed in having to send them abroad as a communication of our Government'.[38] Several times the Van der Grintens attempted to retrieve their rights and money, but in vain. In 1959 the OAP informed them that return of the claimed property was not in the national interest.[39] The Dutch legal adviser of Océ-van der Grinten remarked that little could be done against the injustice of states.[40] It seems that here a firm from a small country was at a disadvantage. In the meantime, the relationship with Bruning was resumed. During the war Bruning had come to miss the Van der Grinten knowhow and special products, and so the American firm was glad to renew the agreements.

The three brothers Van der Grinten started to build up their licensee network along the same lines as before. Their aim was to reconstruct the pre-war world as soon as possible. Sometimes the old links could be maintained, as in the case of Bruning in the USA, Messerli in Switzerland, Jobé in Belgium and A.B. Ingeniösutensilier in Sweden. But contact with the countries in eastern Europe came slowly to an end, as the communist regimes began to take over.

Before the war, the introduction of the Retocee process had by and large been restricted to The Netherlands. After the war, the brothers wanted to go full speed ahead with its introduction in Europe and the USA. Not all licensees, however, were inclined to take up the Retocee process, because it required a different marketing approach. The process was technically more complicated than the Océ process. Besides, Retocee was intended for the office and there used mostly by women secretaries, while the Océ system was a man's world: used by engineers and technicians. For that reason, not all licensees wanted to take up Retocee, while Van der Grinten desired only one licensee in each country (though, as noted earlier, in some countries the firm had both a sales agent and a producer. This dilemma was sometimes solved by changing licensees. The Van der Grinten family had a distinct preference for long term relationships. The disruption of the war, however, gave the brothers the opportunity to reconsider several relationships with respect to the introduction of Retocee.

So in France and Great Britain they looked for new partners. What did they look for in a licensee? In 1945 Karel van der Grinten put his ideas on paper. A licensee had to be a producer of light-sensitive paper. No extensive scientific knowledge was required, otherwise there would be no point in co-operation with Van der Grinten, but the licensee must be well organised and, above all, trustworthy.[41] In France they allied themselves with a small firm whose most important manager, M. Haenel, radiated confidence and enthusiasm. His great interest in the Retocee process made him an attractive partner in Van der Grinten eyes. He was also prepared to take up the production of Océ paper and the marketing of all Océ special products. Indeed, Haenel succeeded in making a flourishing business out of Océ products.[42]

It took five years to come to a satisfactory agreement in Great Britain. In 1945 Van der Grinten started negotiations with a family friend, H.D.M. Murray, who had become manager of the confiscated former Kalle subsidiary Ozalid. The financial men of Ozalid found the price asked by Van der Grinten too high. After that, Van der Grinten tried without success to come to terms with B. Mason. Unexpectedly, Ilford showed an interest in a licensing agreement, because the Retocee process seemed a possible alternative to the copyrapid process of Kodak and Agfa. Louis van der Grinten felt flattered by the interest of such an important concern. He felt sure that such experienced persons would quickly come to terms, which indeed they did. Somewhat reluctantly, Ilford agreed to take up the whole Océ line together with the Retocee process.[43]

All in all, it took several years to restore the old network. Van der Grinten was by no means the only firm in the market for copying papers. In the case of diazo and blueprint paper it faced the competition of Kalle and former Kalle subsidiaries all over the world. Moreover, some German and English firms such as Renker, Spang, Hall Harding were still operating in the diazo field and also had their international contacts. The Retocee process found stiff competition in the copyrapid systems of Agfa and Kodak. Despite this competition, the firm began a second period of expansion in the 1950s. Yet things did not always go smoothly. There were several difficulties inherent the network it created.

In countries where production and marketing were in different hands, Van der Grinten was often called to intervene or to seek a compromise. For instance, in Indonesia (the former Dutch East Indies) the marketing firm Van Dorp complained about the quality of the local product, preferring to sell the Dutch product, which it could not do as the paper manufacturing firm Padalarang had the exclusive right to produce for the Indonesian market. The managers of Padalarang in turn complained about the bad sales figures of the marketing firm and were convinced that they could do better themselves, given the chance.[44] In the meantime, competitors had a good opportunity to seize the market, so this situation was not at all advantageous to Van der Grinten.

National boundaries provided a second point of dispute. The licensees were forbidden to sell their products outside their own territory. These territories were based on national boundaries and national policies, and not on economic considerations. For instance, the Belgian licensee had the right to serve the Belgian colony in Africa, the Congo. As this place was far removed from Belgium, the licensee (a rather small firm) did little to explore this market, while the South African licensee saw all kinds of possibilities to sell, but had no right to export to the Congo.[45] Cyprus belonged to the Greek Territory, but this licensee was not very active. The Israeli licensee had useful commercial contacts in Cyprus and received many inquiries, but could not deliver.[46] Furthermore, there were constant quibbles about serving the large international concerns. Van der Grinten was of the opinion that these concerns ought to buy the products in the country where these were used, and wanted more or less to force them to do just that. In 1950 Karel van der Grinten remarked to Guthery about this matter:

> It is very funny how some of these big concerns make complicated transactions. We know for instance that the *London*-Office of the Royal Shell purchases by their office at *The Hague* paper, which they send to *Egypt*. Also in that case we decided that our English licensee had nothing to do with that transaction and that it was the Egyptian licensee who had to be protected.[47]

Philips' headquarters in Eindhoven had come to the conclusion that it was cheaper to buy Océ paper in Belgium than in The Netherlands. Some judicious handling was needed to let it buy the paper in The Netherlands without losing Philips as a customer altogether.[48] This way the national organisation of the licensee network came more and more into conflict with the development of international trade.

The third point of weakness in the network of licensees was the necessity to renew contracts after several years. This caused a lot of work, as the contracts were always formulated with great care. It also gave some uncertainty. Kindleberger has suggested that this was one of the most important differences between an arm's length contract and internalisation.[49] When choosing its partners, Van der Grinten had looked for firms in the same industry, and potentially the licensee and Van der Grinten could be competitors.[50] When the renewal of the agreement was necessary, both parties started to reconsider each other's performance and strength. This evaluation could lead to an unexpected outcome. In 1955 Van der Grinten got a disagreeable letter from its US lawyer: 'I have very bad news to bring to you. Hold on to your chair, for you will be shocked by everything I have to report'.[51] And shocked it was indeed, for its oldest licensee Bruning wanted to end the relationship. Never before had a licensee of long standing wanted to bring the relationship to an end. Bruning's argument for the break was that the new members in the board of directors did not consider themselves bound by old friendship ties. The firm now had its own research laboratories and considered that the help of Van der Grinten was no longer indispensable. Of course, in those years the whole world looked to the USA for leadership, so their attitude was understandable. Nevertheless, Van der Grinten felt a little triumphant when Bruning returned as licensee in 1958 but the joy over the return of the lost son was short-lived, as in 1961 the break became complete.

There was another element of uncertainty. Most licensee firms were small family firms. The death of a manager could make all the difference. This kind of insecurity became evident when M. Haenel, the managing director and partial owner of the French firm Photosia, died unexpectedly in 1961 and his heirs started a prolonged dispute about the continuation of the business. Van der Grinten was in danger of losing its whole French market. In the same year the owner and manager of the Belgian firm, M. Pholien, died, leaving a teenage son to succeed.[22] Over the years Van der Grinten had become more and more dependent on the licensees. Not only did these firms pay for part of the research by way of their royalties, but they also bought chemicals and special products and provided in that way an important market outlet. The licensees, however, were often likewise dependent on Van der Grinten, certainly when they were comparatively small and Van der Grinten products formed a large part of their turnover. The feeling of dependence was mutual and both parties therefore welcomed the idea of a closer relationship.

In the 1950s the Van der Grinten firm had grown in financial strength thanks to several very prosperous years. The three brothers were still directors, but they had taken into their midst someone from outside the family, even from outside the firm: Dr J. van Susante, former managing director of a management consulting agency. To avoid nepotism, only one son of each Van der Grinten brother was permitted to join the business. In 1958 the firm was transformed into a public company with shares on the Amsterdam Stock Exchange. By that time Van der Grinten possessed the financial means and the corporate structure to broaden its activities. The greater financial strength offered several options ranging from the swap of stock to complete takeovers of other firms. At the beginning of the 1960s, therefore, Van der Grinten formulated a new policy to take a financial stake in important licensee firms to secure the market. This policy was especially valid for the European market because the EC cartel regulations proved a threat to its agreements, while on the other hand the common market offered opportunities to make production more efficient by specialising the plants in various countries.[23]

Following its newly formulated policy, a wholly owned subsidiary was set up in Belgium in 1964, taking over the activities (and personnel) of the firm Jobé. More or less the same procedure was followed in the

Austrian case, where the owners were nearing retirement age. In the newly founded firm Van der Grinten got the majority of shares. When the very active Swedish firm A.B. Ingeniörsutensilier wanted to build a new production unit but lacked the financial means, Van der Grinten stepped in and bought all shares of A.B. Ingeniörsutensilier in 1966. The French firm Photosia was made into a subsidiary in the same year by purchasing almost all the shares. To pay for those two takeovers, a new issue of Van der Grinten shares was successfully floated. Only in Germany was a sales organisation set up independent of any German firm.[54] The unhappy pre-war experience with Renker had made Van der Grinten somewhat reluctant to join hands with a German firm. The incorporation of licensees simplified several organisational matters and provided more security in the long run.[55]

V

Conclusion

It is remarkable that so small a firm was so active in international business. Not only in a few neighbouring countries, but around continents the family successfully looked for agents and licensees. To enter the international world was probably less difficult than is often assumed, a conclusion reached earlier by Lundström.[56] Moreover, the small firm possessed certain advantages. Combined action in research, development and marketing was easy to achieve. The very personal approach to business, a possibility in a small firm, occassionally forged ties of friendship stronger than any legal ties.

Given the choice between licensing or foreign direct investment, Van der Grinten had preferred licensing until the 1960s. Schröter concluded that the German chemical industry after the First World War preferred cartels and long term contracts to foreign direct investment, because in that way the position of the companies seemed more secure.[57] The longing for security had the opposite effect on Van der Grinten. Because they wanted to make sure of their market position, they transformed some contracts into foreign direct investment.

In his study of British multinationals, Jones found two important factors behind foreign direct investment in the period 1945–66: market attraction/size and the acquisition of another company. Patent protection seemed to have been no factor at all.[58] Schröter concluded that even in the German chemical industry during the years 1870–1930 patents played a minor role in the decision to invest overseas.[59] In the case of Océ-van der Grinten, the drive for foreign investment was indeed brought about by the need to safeguard markets. Yet, implicitly, patent protection was of fundamental importance, even if the patents were often not mentioned.

The wish to profit from its research effort has always been Van der Grinten's reason for entering the international world. Thanks to the strength of its technological advantage, it could indeed acquire an international position. By transforming licensees into subsidiaries, Van der Grinten became a real multinational enterprise in the 1960s. This reflected the growth of its financial strength. In fact, Van der Grinten had been an internationally operating firm for years. Since the 1930s it had been involved with production in many countries, exercising a great deal of influence over production and marketing of its licensees by way of extensive contracts and intensive personal support, without a great deal of foreign investment. The question arises whether the identification of multinational enterprise with foreign direct investment is not restricting the concept too much. In a recent article, Wilkins concludes that multinational enterprise and foreign direct investment are not the same. Financing the operation is but one facet of what business abroad does. All kinds of management requirements accompany the establishment and development of business abroad.[60] Taking the argument of Wilkins one step further, one could pose the question as to whether a firm can be a mutinational enterprise without foreign direct investment. As we have seen, a firm can play a part in the international transfer of technology and thereby stimulate the development of international business, with hardly any foreign direct investment.

NOTES

1. M. Wilkins, 'The History of European Multinationals: A New Look', *Journal of European Economic History*, Vol. 15 (1986), pp.483–510; idem, 'European and North American Multinationals, 1870–1914: Comparisons and Contrasts', *Business History*, Vol. 30 No.1 (1988), pp.8–45
2. This article is based on the research I did for my contribution to the study about Océ-van der Grinten: H.F.J M. van den Eerenbeemt (ed.), *Van boterkleursel naar kopieersystemen. De ontstaansgeschiedenis van Océ-van der Grinten, 1877–1956* (Leiden, 1991). I wish to thank Océ for its kind permission to publish from its archives. Further reference to this source of information is shortened to AOG (Archives Océ-van der Grinten). I am grateful to Professor Mira Wilkins, Dr Joost Jonker and Dr August J. Veenendaal Jr for their helpful comments on an earlier draft.
3. R. Lundstrom, 'Swedish Multinational Growth before 1930', in P. Hertner and G. Jones (eds), *Multinationals: Theory and History* (Aldershot, 1986), pp 135–54. The Swedish firms she analyses owed their growth to their international activities and not the reverse. The same was the case with several British companies: G. Jones, 'Origins, Management and Performance', in ibid., *British Multinationals· Origins, Management and Performance* (Aldershot, 1986), pp 6–7. In her recent book *The History of Foreign Investment in the United States to 1914* (Cambridge, MA, 1989), Wilkins mentions all kinds of small-scale firms along with many big corporations.

4. D. K. Fieldhouse, 'The Multinational: A Critique of a Concept', in A. Teichova, M. Lévy-Leboyer and H. Nussbaum (eds.), *Multinational Enterprise in Historical Perspective* (Cambridge, 1986), p.9; R.E. Caves, *Multinational Enterprise and Economic Analyses* (Cambridge, 1982), p.1, includes in his definition only foreign investment in production plants: 'an enterprise that controls and manages production establishments – plants – located in at least two countries'; M. Wilkins, 'European Multinationals in the USA, 1875–1914', in Teichova et al., *Multinational Enterprise*, pp.56–7; S. Nicholas, 'Agency Contracts, Institutional Modes and Transition to FDI by British Manufacturing Multinationals before 1939', *Journal of Economic History*, Vol. XLIII (1983) pp.675–86; P. Hertner and G. Jones, *Multinationals: Theory and History* (Aldershot, 1986), pp.3–4; In *Banks as Multinationals* (1990) the editor, G. Jones, uses the same definition: 'Multinational banks own and control branches and affiliates in more than one country', p.1.
5. O.E. Williamson, 'The Modern Corporation: Origins, Evolution, Attributes', in *Journal of Economic Literature*, Vol. XIX (Dec. 1981), pp.1537–40. See also: J.H. Dunning, J.A. Cantwell, T.A.B. Corley, 'The Theory of International Production: Some Historical Antecedents', in Hertner and Jones, *Theory and History*, pp.19–40; M. Casson, 'General Theories of the Multinational Enterprise: Their Relevance to Business History', loc. cit., pp.42–61.
6. S. Nicholas, 'The Theory of Multinational Enterprise as a Transactional Mode', in *Theory and History*, pp.64–77; M. Wilkins, *The Maturing of Multinational Enterprise: American Business abroad from 1914 to 1970* (Cambridge, MA, 1974), pp.415–42.
7. M. Wilkins, 'Defining a Firm: History and Theory', in Hertner and Jones, *Theory and History*, pp.80–92: she called for an analysis of the 'ragged edge of the firm', the many transactions between individual firms; H. Schröter; 'Risk and Control in Multinational Enterprise: German Businesses in Scandinavia, 1918–1939', *Business History Review*, Vol. 62 (1988), pp.420–43; C.P. Kindleberger, 'Summary: Reflections on the Papers and the Debate on Multinational Enterprise: International Finance, Markets and Governments in the Twentieth Century', in A. Teichova, M. Lévy-Leboyer, H. Nussbaum (eds.), *Historical Studies in International Corporate Business* (Cambridge, 1989), pp.233–7.
8. M. Casson, *The Firm and the Market: Studies on Multinational Enterprise and the Scope of the Firm* (Oxford, 1987), p.150.
9. The old family firm was called 'Nederlandsche Boterkleurselfabriek L. van der Grinten', and the name of the new firm was 'N.V. Chemische Fabriek L. van der Grinten'.
10. The two firms were restructured. The old 'Boterkleurselfabriek' became a subsidiary of the 'Chemische Fabriek'.
11. AOG, 213, Unpublished Annual Reports CF and BO, 1920–39; *Annual Reports*, 1957–90.
12. AOG, 71, Correspondence with Bruning, 1920–23; AOG, 123, Licensing Contract, 7 Dec. 1923.
13. E. Valenta, *Photographische Chemie und Chemikalienkunde mit Berücksichtigung der Bedürfnisse der graphischen Druckgewerbe* (Halle, 1922) II, pp.448–57; J.M. Eder, 'Zur Geschichte der Diazotypie', *Zeitschrift für wissenschaftliche Photographie*, Vol. 33 No.1 (1934), pp.1–12.
14. *Kaleidoskop 63* (Munich, 1963).
15. AOG, 592, Correspondence with Kalle, 1925.
16. AOG, 592, Correspondence with Kalle, 1927; AOG, 126, Cases Kalle versus Van der Grinten.
17. AOG, 12, Legal Documents Germany, Contract with Kalle, 1930–33.
18. C. Freeman, *The Economics of Industrial Innovation* (1982) pp.54–7, 169–86; D.A. Hounshell and J.K. Smith Jr., *Science and Corporate Strategy: Du Pont R&D, 1902–1980* (New York/Cambridge, 1988), pp.190–209, 238.
19. AOG, 213, Unpublished Annual Reports CF, Letter 10 May 1941.
20. L. van der Grinten, 'A History of Reflex Copying – with Notes on the Retocee Process

of Screen Reflectography', *Photographic Journal*, (1938), pp.579–84; ibid., 'The Diazotype Printing Process: A Review', *Photographic Journal*, Vol. 92 B (1952), pp.43–8.

21. J.H. Dessauer, *My Years with Xerox: The Billions Nobody Wanted* (New York, 1971), pp.103–41; S.M. Linowitz, *The Making of a Public Man: A Memoir* (Boston/Toronto, 1985), pp.60–90.
22. See the discussion about the English patent regulations and the chemical industry in L.F. Haber, *The Chemical Industry, 1900–1930, International Growth and Technological Change* (Oxford, 1971), pp.146–7.
23. A visitor from Bruning wrote back home after a visit to Océ-Van der Grinten: 'What impressed and astonished me most of all was the speed of production. One surely can say without exaggeration that here is a plant not run on an average European mode of production, where everything as a rule is slow motion. ... Here we find a plant that even excels our American efficiency in speed of production and also in general layout of facilities'. AOG, 123, Letter from Murck to Ch. Bruning, undated (1928).
24. To put it into MNE vocabulary: several 'location-specific' factors, such as tariffs, patent law and production near the customer, stimulate the setting up of foreign production units; in terms of 'ownership advantages' the firm possessed a technological advantage, but clearly lacked a financial or marketing advantage. Therefore the obvious solution was licensing.
25. AOG, 752, Correspondence with Bruning, Letter 16 May 1922.
26. AOG, 123, Licensing Contracts. The contracts were the result of negotiations between licensor and licensee. Therefore, the content differed according to circumstances. Once both parties agreed to a duration of nearly 20 years (the duration of the patent), but this turned out to be a mistake. Initially, most contracts had a length of several years. In later years contracts were concluded without a fixed duration, but with a term of notice of about a year for both parties. Many relationships continued for decades.
27. In 1923 the firm was called the New York Blue Print Paper Co. In later years it was renamed the Charles Bruning Co. The firm was (and still is) specialised in drawing office supplies. In 1991 it became part of the Océ group.
28. AOG, 752, Correspondence with Bruning, 1925–27.
29. AOG, 71, Letters written during Karel's first 'grand tour' throughout Eastern Europe, 1926; During the inter-war years West-European companies showed great interest in these regions. See A. Teichova and P.L. Cottrell (eds.), *International Business and Central Europe, 1918–1939* (Leicester, 1983).
30. Jones, 'Origins, Management and Performance', pp.11–12.
31. AOG, 126, Legal Documents Germany and Correspondence with Renker, 1927–38.
32. In 1939 Océ-Van der Grinten had agreements with about 40 firms, half of which produced Océ-paper locally.
33. It is unknown to me whether they did buy a new machine or purchased one secondhand. In 1928 Van der Grinten paid Fl5,500 for a new coating machine. AOG, 6, Correspondence with the Radebeuler Maschinenfabrik August Koebig, Letter 11 June 1928.
34. AOG 124, SACSI, 1930–32; AOG, 124, Correspondence with Gerstung, 1930–32.
35. AOG, 752, Correspondence with Guthery, 1939–40, Letter 9 May 1940.
36. AOG, 124, Correspondence with Guthery, 1945–56; also AOG, 752, Correspondence with Guthery, 1945–61; Business in these years was seriously hindered by government regulations on both sides. For instance, the money due to Van der Grinten from the Guthery company was blocked under United States restrictions against the property of aliens.
37. AOG, 591, Return of Patents, Letter from OAP to Pollard & Johnston (legal advisor Van der Grinten) 15 Aug.1951.
38. Ibid., Letter Pollard & Johnston, 17 Aug.1951.
39. Ibid., Letter from OAP, order of disallowance, 11 March 1959.
40. Ibid., Letter from J.M. Barents, 13 April 1959.
41. AOG, 12, Legal Documents France, Letter 5 July 1945.
42. AOG, 12, Legal Documents France, 1945–1950.

43. AOG, 12, Legal Documents Britain, 1945–1950.
44. AOG, 7, Report on Visit to Indonesia, Sept.1954.
45. AOG, 12, Legal Documents Belgium: the question remained unresolved for years.
46. AOG, 7, Report on visit to Far and Near East, Sept.1954.
47. AOG, 124, Correspondence with Guthery, 27 April 1950.
48. AOG, 12, Legal Documents Belgium, Report 4 May 1946.
49. Kindleberger, 'Summary, Reflections on the Papers', p.235.
50. Long before it became an acknowledged policy, Océ-van der Grinten made use of 'strategic alliances'. P. O'Brien and M. Tullis, 'Strategic Alliances: The Shifting Boundaries between Collaboration and Competing', *Multinational Business* (1989), No.4, pp.10–17.
51. AOG, 123, Correspondence with Bruning, 1954–6.
52. AOG, Legal Documents France and Belgium, 1961–6.
53. AOG, Minutes, Board of Directors, 1958–66.
54. AOG, *Annual Reports*, 1957–66.
55. Today the company Océ-Van der Grinten has subsidiaries in some 25 countries. However, in some 65 other countries the company still works closely together with licensees and distributors according to the principles set out in the 1930s.
56. Lundström, 'Swedish Multinational Growth before 1930', pp.151–3.
57. This policy of the German firms was motivated by their losses of overseas holdings during the First World War; Schröter, 'Risk and Control in Multinational Enterprise', pp.420–43.
58. Jones, 'Origins, Management and Performance', p.8.
59. H.G. Schröter, 'Die Auslandinvestitionen der deutschen chemischen Industrie 1870 bis 1930', *Zeitschrift für Unternehmensgeschichte*, Vol. 14 (1990) pp.13–15.
60. Wilkins, 'European and North American Multinationals', p.34.

The Eastern & Australian Steamship Company and the Shipping Dispute between Australia and Japan, 1936–39

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In the 1930s British shipping companies in the Far East found it difficult to compete with Japanese lines, which enjoyed subsidies and other support from the Japanese government. However, in the trade between Australia and Japan, the Eastern & Australian Steamship Co. was able to secure a greater share of the business than it had been offered by its Japanese rivals. It was able to do so because it enjoyed the staunch backing of the Australian government, which also decided to assist the Eastern & Australian with subsidies. The Australian government intervened because of the commercial and strategic benefits that would flow from the operations of a non-Japanese line in the northern and western Pacific. Moreover, the Australian government refused to work towards the completion of import quotas for cotton textiles until the shipping dispute had been resolved. As a result Japanese cotton textile manufacturers, the major customers of the shipping companies, insisted that they reach a compromise acceptable to the Eastern & Australian line.

Between 1936 and 1939 an important conflict broke out between Japanese shipping lines and the Eastern & Australian Steamship Co. Ltd (E&A) over the allocation of business within the conference that operated on the Australia–Japan route. It coincided with Australia's trade treaty negotiations with Japan, which dealt with quotas on Japanese exports of textiles to Australia and quotas imposed by the Japanese on purchases of Australian wool. This was also a period when British shipping companies were worried by growing competition from Japanese lines. Japanese shipping companies had increased their share of the business within the Bombay–Japan Conference and the Calcutta–Japan Conference.[1] A number of authors have discussed the rise of Japanese shipping in the inter-war years. The growing competition with British firms has also been surveyed. However, the dispute with E&A has received little attention.[2] The Japanese press was in little doubt that the intense and determined way in which the shipping companies bargained

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over the new pooling arrangement could be traced to a belief that the outcome would have a major impact on the resolution of other shipping issues confronting Japan and the United Kingdom.[3] Echoing this view, Kevin Burley in his fine study of British shipping in Australia considered that the dispute between the Japanese and the E&A line 'served as a pointer'[4] to Anglo-Japanese rivalry on other trade routes.

The E&A was formed in London in 1872 as part of the Inchcape group to carry mail between Australia and Singapore, and cargo and passengers to and from the Dutch East Indies. A subsidiary of the Australasian United Steam Navigation Co. (AUSN), it eventually extended its services to encompass Hong Kong, Shanghai and Japan, as well as the Philippines and Borneo. In addition to pioneering this trade, the line introduced vessels equipped with refrigeration facilities and carried meat and dairy products to the Far East. In step with the established practice in British shipping, Lord Inchcape assigned the management of AUSN to a firm of shipping agents, Macdonald Hamilton & Co.[5] In the 1930s it faced increased competition from Japanese shipping lines. The Japanese lines were the Osaka Shosen Kaisha; the Japan–Australia Line (a combination of the three main tramp shipowners – Yamashita Kisen Kaisha, Kawasaki Kisen Kaisha, and Kokusai Kisen Kaisha); and the Yamashita Kisen Kaisha. They posed a threat to E&A's market share because they had acquired faster, bigger, and better equipped ships. Unlike E&A, the Japanese lines were indulged by their government. They received a building subsidy of 54 yen per ton (equivalent to about £4 per ton) for the 18 knot vessels they were currently introducing; for a 7,000-ton ship this amounted to £28,500. They were also granted subsidies for special equipment, as well as operating subsidies.[6] In early 1936 tensions between the Japanese and E&A were exacerbated by the expiry in November 1935 of the pool for the northbound wool trade from Australia and New Zealand. The pool on the southbound trade from Japan was due to expire in November 1936.

I

Eastern & Australian had won 20 per cent of the wool trade from Australia and New Zealand, but now it wanted 25 per cent of the Australian trade on the grounds that the Japanese lines had captured part of its share of the New Zealand trade through the introduction of new services. In 1936 E&A also hoped for an assured 25 per cent of the cargoes from Japan to Australia. Without such a guaranteed proportion of the trade E&A claimed it would be 'fighting a losing battle'.[7] The Australian Prime Minister, J.A. Lyons, was warned that some form of government support was needed if E&A were to have a chance of extracting such a concession from the Japanese companies. If it went out of business the Japanese lines would be free to collude and charge whatever rates they wanted.[8] Although the pooling of business led to uniform freight rates, it did not eliminate competition. Thus the Japanese lines attempted to cut into E&A's share by offering additional services and investing in better ships. The pools only lasted for fixed periods of time and this allowed for the outbreak of competition when it came to their renewal. The Australian government believed that the Japanese lines were much more likely to be willing and able to collude if they did not have to deal with E&A. Conference rates were periodically re-negotiated between the conference lines, the Commonwealth government and shippers, especially primary producers.[9] Macdonald, Hamilton & Co. was aware of this and as early as July 1936 it had hinted at its desire for a subsidy when it pointed out to Lyons that it lacked the finance with which to replace its three steamers which were over 20 years old. Even if the money could be found, there was too much uncertainty in a trade where Japanese competitors were subsidised by their government. The Japanese also benefited from orders from the Japanese government and Japanese trading firms.[10] Lyons and Dr Earle Page, the Minister for Commerce, were coming to the conclusion that E&A was too important to lose. The company had made it clear that it would be pleased to receive government patronage in its widest meaning. In particular, it was keen to involve the Lyons government in the negotiations with the Japanese over future pool arrangements. It was encouraged to fight harder than had been its custom by the result of a similar dispute between the Dutch government and the Japanese lines, which enabled the Dutch to obtain more than 33⅓ per cent of the trade between the East Indies and Japan.[11]

Needless to say, the Japanese were untroubled by E&A's plight. They wanted the rewards to which they felt entitled as a result of having invested in superior ships and having developed additional services. They had decided to amend the old wool pooling arrangement to take account of their introduction of extra steamship cargo services to Australia and New Zealand. This would cut into the 20 per cent of the Australian and New Zealand trade previously allocated to E&A. It was natural enough for it to retaliate by demanding 25 per cent of the Australian wool trade, which was equal to 20 per cent of the combined Australian and New Zealand trade. It also wanted 25 per cent of the southbound trade from Japan to Australia. As for their new services, the Japanese could allocate whatever proportion of their 75 per cent of the trade to them.[12]

With the expiry of the pool on southbound trade and the refusal of the Japanese to sign a new agreement on the wool trade, Page felt that he had no choice but to move in November 1936 to commit the cabinet to the defence of E&A. Page had approached Sir Henry Gullett, the Minister without Portfolio Directing Negotiations for Trade Treaties, to see if he could deal with the matter as part of the current discussions over the new trade treaty with Japan. However, Gullett preferred to leave the shipping issue until the treaty had been concluded. Meanwhile, E&A was left in a difficult bargaining position. According to Page E&A's negotiating power would be strengthened if it could give the impression that it was supported by the government. In his opinion the maintenance of a competitive British service with Japan was necessary and the government had to help by participating in the negotiations. Echoing the words of the line's agents, Macdonald, Hamilton & Co., Page added that an alternative to such action would be to pay a subsidy so that the line could compete with the Japanese and acquire faster and more modern vessels. While he was Acting Minister for Commerce H.V. Thorby had spoken to Birt & Co. and to Burns Philip & Co., agents for two of the Japanese lines, to stir them into exploring the possibility of new pools, but the Japanese proposals which resulted were unacceptable to E&A.[13]

Gullett's refusal to deal with the dispute at the same time as the trade treaty negotiations suggested that there was a danger that the government could recoil from further complicating an already difficult relationship with Japan, so E&A could not afford to ease the pressure on Page. On 26 February 1937 Page was informed that for one thing competition had already broken out and no-one knew how it would end. Therefore E&A had little option but to ask the government to honour its promise to help it to defend its share of the trade. Clearly, E&A did not fancy its chances in an open competition with the Japanese. While the Japanese were keen to exclude shipping matters from trade treaty negotiations, given E&A's calculation that it would lose its market share without government support, it was determined to link the shipping dispute to other aspects of trade negotiations. It was made to feel more vulnerable when its agent in Kobe uncovered direct evidence that in the near future the Japanese planned to embark on a period of unrestrained competition:

> Mr Sawai, the N.Y.K. Freight Manager, whom I also called upon, made an interesting statement. He said that on his appointment to Tokyo from Seattle, he was much interested to ascertain what standard of worthiness the various Tramp Lines, such as M.B.K., Yamashite, Kawasaki, Kokusai, Daido, etc. had arrived, in support of their claims to participate in regular Conference Trades. He continued that he had made a study of them since his arrival, and whereas he found that their methods were still not quite adjusted to

> attain, as it were, Conference rank, he felt however that it was the duty of the old established Lines (presumably themselves and the O.S.V.) to train them in the way they should go, and he considered that their claims for *equal participation* would have to be recognized in the space of some five years.

There was little sincerity in Japanese offers to arrive at a stable sharing of the available business. This made the incorporation in the trade treaty of 25 per cent of the northward wool trade and of the southward cargo trade all the more vital:

> In view of this, even if we were successful in again securing by agreement with the other lines, a quarter share of the Trade, we would be faced in the course of the next few years, with fresh inroads by other Japanese Tramp Lines.

The strategy of E&A was also influenced by the intelligence supplied by a trusted commercial spy in Japan, 'who has a most intimate knowledge of the Japanese mentality and methods'. This spy had reported as follows to Macdonald Hamilton & Co.:

> As soon as the Japanese Government knows that you have official recognition they will soon enough instruct the Japanese Companies to come to terms with you, but newspaper propaganda and a few utterances from Canberra, will do little to bring the Japanese Companies to heel.

Nor could it be forgotten that the Japanese government was assisting Japanese shipping companies, because shipping was of strategic importance and made a valuable contribution to the balance of payments. In addition, the Japanese coastal trade and trade with Japan's colonies and territories were reserved for Japanese shipping companies.[14]

As the weeks passed into months the Japanese realised that they might have underestimated the potential for co-operation between E&A and the Lyons government. The Japanese lines called for a conference with E&A because they believed that 'the present situation, with no agreement, was risky and might culminate in a rate war',[15] in which E&A would do better than they had otherwise expected now that it had government backing. The Japanese proposal was made through S. Uchida, the Managing Director of the Osaka Shoshan Kaisha. Nevertheless, for the Japanese, concern over an open-ended struggle for business did not preclude a determination to increase their share under a new pool. Quite predictably Uchida repeated that in the trade between Japan, Australia and New Zealand the division of the freight should be such that the

Japanese lines were rewarded for the introduction of modern vessels. He also pointed out that he was against intervention by the Australian government. This was opposed by E&A, which wanted any such conference in Japan to be sponsored by the Australian government with the Australian Government Commissioner to Japan, Lieutenant-Colonel Longfield Lloyd,[16] or his assistant, attending as an observer. In addition, E&A declared bluntly that it would not accept a formula that allowed the Japanese lines to be rewarded with a share of the traffic commensurate with the relative modernity of their vessels, because this would lead inevitably to the decline of E&A. The Japanese view was that for any additional services they created, the new trade that resulted should be diverted from E&A's share – this would make its operations unprofitable. In response, E&A repeated a number of conditions that had to be met before it would agree to attend a conference. There would have to be no assumption that its claim for 25 per cent of the trade was unacceptable. How the Japanese divided up the remaining 75 per cent was up to them; they could allocate part of it according to the use of modern vessels if they wished. A time limit on the duration of the conference would be necessary, and the outcome had to be approved by the Australian government.[17]

II

While E&A's hand was strengthened by the support it was receiving from the Lyons government, it failed to attract much support from the British government. The Ministry of Transport thought it best that things be left to the companies to resolve among themselves, but would not object to the presence of an observer representing the Australian government.[18] Sir Halford Mackinder, the Chairman of the Imperial Shipping Committee, was sympathetic. His assessment of the situation was that the Japanese were planning to restrict E&A to as small a proportion of the trade as it needed just barely to survive. The Japanese companies would get the rest, including any increase in the volume of business. He hoped that E&A would not allow itself to be bullied into such an agreement.[19] In fact, in November 1937 the Imperial Shipping Committee was informed that Japanese merchants were giving increased preference to Japanese shipowners, but the UK government was unable or unwilling to assist British shipping companies that were trying to resist Japanese competition. According to W.L. Hitchens, a shipbuilder and member of the Committee:

> The root of the trouble lay in the contrast between the strength of

> the Japanese, an efficient and patriotic people organised under a powerful centralised government, and the weakness of the British Empire in the East, consisting as it did of different peoples, many of them with little or no sense of loyalty to British shipping, and governed by a large number of separate authorities with no co-ordinated and effective shipping policy comparable to that of the Japanese government.[20]

Never one to underestimate the craftiness and commercial aggressiveness of the Japanese, H.J. Mackinnon, a shareholder in AUSN, was certain that they would aim to have E&A put in the position of merely defending its share of the wool trade, rather than demanding an even larger amount. He was not far from the truth. The Japanese had cajoled and persuaded the British lines operating between India and Japan to accept a static share, with the result that they did not obtain part of the subsequent expansion of that trade. The same could happen in the Australia–Japan trade; only the unflinching intervention of the Australian government could prevent this. As the wool was sold in Australia and shipped fob (free on board), the Japanese buyers would decide how it would be shipped. So it was vital for E&A and the Australian government to make sure that the British line would receive a fair share of the expanded trade and a percentage figure embodied in a formal agreement would be the way to do this. Mackinnon forcefully explained to the Australian representative on the Imperial Shipping Committee:

> the Japs if firmly faced, will be more malleable than they were before the present hostilities began in China. Why should they be allowed to get away with a share of the trade, based not only on the ships already plying, but also on the ships that they are building?[21]

Mackinnon had been asked by the Commonwealth government to examine this whole issue, and he knew that the Australians understood only too well 'the necessity when supping with the Japanese of taking a long spoon!'[22]

Knowing the pressure to which it would be exposed if governments were allowed to participate in any conference, the Japanese government remained stubbornly opposed to such a development. However, on 17 December 1937 the Japanese government revealed that it was willing to exert unofficially some influence on the Japanese lines to secure a settlement, but it would take no direct part in any conference. From Kuramatsu Murai, the Japanese Consul-General, the Australians learned that the shipping companies were so implacably against government participation they would not even accept the attendance of Lloyd as an observer. The Australian government was pleased that the Japanese government intended to use its influence to help resolve the issue, but it also warned Tokyo that it could not accept a new pool that would ultimately lead to the demise of the sole British firm operating in the Japan–Australia trade. It also reaffirmed its desire to have an observer at the negotiations.[23] No-one could anticipate what would happen next. In Lloyd the Australian government and E&A had found the right diplomat for the moment. He had access to valuable information, enjoyed a good working relationship with G.R. Rickards, E&A's representative in Japan, and was capable of astute judgements. On 22 December he informed Canberra that the shipping companies remained opposed to the presence of a government observer, but were willing to talk with Rickards about the possibility of preliminary discussions 'in order to see how close things could be taken, although admitting Government consent is an ultimate essential'.[24] In Lloyd's estimation this looked like 'an effort to sidestep the immediate issue, but it does not necessarily indicate that the outcome would be as the E. and A.G.B. [*sic*] Company desire'.[25] In his judgement, 'prospects [were] generally fair but not exactly certain'.[26] Interestingly, the Japanese companies' attitude to government observation contradicted the Japanese government's own declared view to the Commonwealth government, 'practically with a view to bringing pressure upon the E. and A.S.S. Company to confer'.[27] Aware that Lloyd was not above worrying about such things, a few days later the Australian government let him know that it had not made his observer status at the negotiations an essential condition, because it did not want the negotiations to break down over a formality.[28] The main concern was that the Japanese shipping companies could 'be prepared to break on this formality rather than break in actual negotiations on question of freight allocations'.[29]

Any hope that the Japanese would make quick and substantial concessions proved groundless. On 8 January 1938 Lloyd reported glumly that, despite Rickards' excellent performance in the preliminary talks, the percentage conceded by the Japanese was insufficient. It seemed pretty clear that only Commonwealth government action would tip the balance of forces.[30] For its part E&A refused to give in and repeated its demand for 25 per cent of the trade to and from Japan, but it would take much more than this to disarm the Japanese. Rickards simply could not get them to surrender. Lloyd made it plain that it was now up to Canberra to decide whether it would insist on 25 per cent.[31] He assured Gullett and others in Canberra that direct government intervention of this kind would not cause the Japanese to break off negotiations. Unintimidated by Canberra's opposition to their will, the Japanese complained about the lack of a willingness to compromise on the part of E&A. They sensed that 25 per cent each way was an ambit claim by E&A. They also secretly believed that, because the Australians were keen to resolve the matter before the relevant Australian ministers departed for trade talks in London, the Commonwealth government would give ground.[32] They appeared to be on the right track when the Japanese Consul-General was told that the Lyons government was taking charge with the aim of securing only 22.5 per cent of the northbound wool trade and 25 per cent of the southward trade.[33]

As if this was not bad enough for E&A, on 23 February Lloyd let Canberra know that the Japanese government would not try to force the hand of the shipping companies unless the claim for 25 per cent southward was reduced, but they did not indicate by how much, in the hope that the Australians would go lower than the Japanese were in fact willing to accept. Nor would the Japanese government do anything to compel the Japanese lines to accept the 22.5 per cent share of the wool trade accepted by E&A, until what was deemed to be a suitable figure for the southward trade was put forward by the Australians.[34] However, there were divisions within the Japanese state which the Australians could exploit. The Japanese Foreign Office was far from totally hostile. Its representatives let Lloyd know that they 'did not much like having to express themselves so uncompromisingly'.[35] He drew a number of conclusions about the Japanese which could only stiffen the resolve of the Australian government: They were playing a waiting game. They wanted to see just how far the Lyons government was willing to go to defend E&A's interests. If the government showed signs of wavering, they would strive even harder to crowd E&A out of the trade.[36] Having talked and threatened, having gathered as much useful information about the aims and tactics of the Japanese, by the end of February Lloyd and Rickards had decided to leave the field free for the government. Rickards would not be participating in any more discussions lest this cut across what the government was doing. Lloyd urged the government to stick to its proposal which he had put before the Foreign Office and which would in turn be placed before the shipping companies.[37]

This was the advice that the Australian government wanted to hear. Antagonised and irritated, the Lyons government became more abrasive and insistent. Canberra presented the Japanese with an ultimatum. If they did not persuade the shipping companies to agree to E&A receiving 22.5 per cent of the wool trade and a 25 per cent share of southbound cargo, the Australian government could not 'see any prospect of settlement on less favourable terms'.[38] More importantly, the Australians would not 'proceed to a final consideration of treaty proposals'[39] until the shipping issue had been resolved. This was guaranteed to alarm Japanese textile manufacturers who were anxious to retain an assured share of the Australian market, and an adequate supply of wool. Sooner or later they would turn against the shipping companies and demand a resolution of the dispute. At last Lyons and Page were using the bargaining chip which E&A had been pressing for since the start of the dispute. However, everything that he knew about Japanese business practice and politics did not allow Lloyd to expect an easy victory. He encouraged the government to stick to its guns by suggesting that one of the shipping companies was willing to break ranks and agree to a larger share of the trade than had hitherto been offered to E&A.[40] In fact, A. C. Moore, an Australian official, had explained to Murai that if a satisfactory outcome was not reached soon there could be a widespread deterioration in trade relations. Adopting the posture of a reasonable go-between, Moore added that he was willing to advise the government to offer E&A less than 25 per cent of the southbound cargoes if the Japanese government decided to press the Japanese lines to agree to 22.5 per cent of the wool trade. In addition, they would need to accept much more than 20 per cent of the southbound cargoes.[41]

On the morning of 10 March 1938 the Japanese government replied with what it declared to be a final and unchangeable offer of 20.85 per cent of the wool trade and 21.8 per cent of the southbound trade. The Australian government wanted to get a little more out of the Japanese and Moore was not fooled by their claim that they could not be moved from this position. To Lloyd's practical eye it appeared that 'a compromise may be necessary on Australian figures but Japanese proposals are too low'.[42] The Australians had not miscalculated and Lloyd, having assimilated himself to Japan's business and political cultures, provided them with the information they needed to counter the Japanese case. As things stood their offer was unrealistically low. At an earlier stage the Japanese had talked about 22.5 per cent southward and 20 per cent northward. He was confident that if the Australian government refused to budge from 22.5 per cent northward it would eventually obtain the compliance of the Japanese.[43] Lloyd also recommended that if Canberra still wanted to compromise on the southward trade it should at the very minimum insist on a figure between 22.5 per cent and 25 per cent. Time was running against a settlement, and the Japanese knew that 'ministers and officials leaving for England apparently desire to crowd matters to hurry conclusion'.[44] The Japanese were counting on benefiting from the waiting game.

Canberra listened to Lloyd, who appreciated the situation. He advocated a firm stand, despite the government's concern that it was running out of time.[45] On 18 March the Australian government finally decided to back the 22.5 per cent each way proposal put up by Moore. By 29 March the Japanese had resigned themselves to 22.5 per cent each way as the amounts they would ask their shipping companies to accept. A week earlier the Australians increased the pressure when Murai was directly informed 'that subject to settlement of shipping question the Commonwealth Government was prepared to conclude a textile-wool arrangement'[46] for a year from 1 July. Lloyd endorsed the Commonwealth's approach as announced to him on 14 April 1938:

> Your firm attitude absolutely right, and if you inform the Consul that you have nothing more to say you will psychologically accelerate finality. It is inadvisable to consider a compromise on any point whatever on the strength of Japanese assurances, which are unlikely to be sustained as local affairs are appreciably worse and they are delinquent.[47]

This would be consistent with their tricky behaviour in the past; they hoped in this way to retain an option to drive E&A out of the trade.[48] In March 1938 E&A claimed that in the unregulated market its share of wool carried north had plummetted. Given that E&A could not obtain any more than a very small percentage of the wool shipped, its managing agents concluded 'that concerted efforts are being made in Japan to keep our carryings down to an almost negligible point in order to prove that our claim to a quota of 22½% is not justified'.[49]

III

Just when everything seemed to be going so well an unfortunate setback occurred. The Australian government's task was complicated by E&A's almost desperate desire to have any pool arrangement incorporated in the trade treaty with Japan. Coming to an agreement was one thing, getting the Japanese to approve of its inclusion in the trade treaty affecting textile and wool quotas was a different matter. They expected the Australians to be satisfied with an assurance on the shipping issue, and in the meantime to proceed towards completion of the intergovernmental treaty. The Australians were willing to compromise over the actual notation of the shipping deal in the treaty, but insisted that in return the Japanese companies make a binding commitment, thus resolving the shipping question before the commercial treaty had been signed. It was a tribute to the shrewdness of the Japanese that after so much argument and research the Australians could not be certain of the 'precise intentions' of their adversaries.[50] After a month of apparent progress, the Japanese government had retreated to part of its original position and to its delaying tactics. Hence, in early June the Foreign Office declared that the shipping companies should be given sufficient time in which to meet and discuss things among themselves. When it also stated that it wanted to settle the details of the new trade agreement before dealing with the shipping issue, it seemed for a while that the March turning point in the negotiations was a case of appearance rather than reality. The Australians repeated that they were keen to resolve the shipping matter first, because they wanted the shipping negotiations, which had reached an advanced stage, to be brought to a quick conclusion. If the Japanese government did not want the shipping pool noted in the trade treaty, the Australians argued that they should offer to pressure the Japanese lines to work towards the completion of pool arrangements by the end of June. When the Japanese Foreign Office insisted that the wool-textile treaty should have priority, the Australians replied that they were willing to begin informal discussions on the details of draft letters dealing with the wool-textile arrangement in anticipation of a satisfactory outcome to the talks between the shipping companies.[51]

For E&A an agreement over the division of business within the pool was not enough. If it did not want to stand alone in the market for passengers and cargo, it did not surprise Page, Gullett and Lyons when it refused to bear the risks of investment in new ships. The closer the dispute came to resolution, the more insistent the demands of the company. Lord Inchcape was not disappointed when he learned that the Australian and Japanese governments had virtually agreed on a new pooling arrangement whereby E&A would receive 22.5 per cent of the wool trade from Australia and 22.5 per cent of the southward trade; E&A would also be compensated financially by the Japanese lines for undercarriage in the period since the termination of the previous agreement. However, E&A still faced financial problems. Equity in the line was held by AUSN, which lacked the funds E&A would need. Inchcape informed Page that the Japanese government was colluding with the Japanese lines to secure a monopoly of the trade. By 1941 one of the lines would be operating two vessels of 11,500 tons capable of travelling at 17 knots. This would be made possible by a running subsidy and the Japanese government's decision to pay 60 per cent of the purchase price for these ships. Another already had a ship capable of 17 knots and two with a capacity to travel at 15 knots. Without a subsidy E&A would not be competitive. Inchcape argued that the fuel and capital costs of vessels capable of 17 knots were too great given the volume of business on the route. At the same time it would be difficult for E&A to attract private debt or equity capital because of the type of ships it possessed, the nature of the Japanese competition and the fact that a large proportion of the capital costs of the Japanese were met by their government. It could operate with existing vessels for another two years and then would have to close down its operations. Alternatively, it could acquire bigger and faster vessels, for which it needed government assistance.[52]

Inchcape and Macdonald Hamilton & Co. were not bluffing when they claimed that AUSN lacked the financial strength to help E&A to fight the Japanese. The tonnage of the AUSN had peaked in 1914 and then began to decline. Railway construction sharply reduced its income from the lucrative Queensland passenger and mail services, which it had dominated. Until 1926 AUSN provided a relatively good return to investors, but after that year, despite some fluctuations, profits tended to fall. It found it increasingly difficult to compete in the coal trade, for passengers and for the general cargoes carried by the main Australian lines, such as the Adelaide Steamship Co., the Melbourne Steamship Co. and the Union Steamship Co. The acquisition of a controlling share in E&A was part of AUSN's attempt to cope with its shrinking share of the coastal trade. As well as allowing AUSN to enter the trade between Australia, the Pacific and the Far East, this acquisition enabled it to link up with P&O's Far Eastern services. Nevertheless, by 1930 AUSN was in the parlous position of chartering vessels from Australian companies. Between 1931 and 1936 dividends were cut by one-third. Its overall financial position was not helped by substantial depreciation on its ships and properties. By 1937 only three of its vessels carried passengers and they were making losses; the rest of AUSN's vessels operated tramp services. It was indicative of the financial weakness of AUSN's shipping operations that by 1939 its most lucrative source of revenue was equity held in other companies. Indeed, AUSN had become an investment house rather than a shipping line.[53]

Meanwhile, one of the Australian government's representatives, J. Fletcher, was drawn to the possibility of having E&A put forward a proposal which the Australians knew would have the support of the relevant Japanese officials, because this would 'mean a prompt completion of the shipping negotiations once the shipping lines resume their discussions'.[54] Fletcher was confident of Australia's bargaining power:

> From the conversations over the last two days in which the Japanese have talked very freely I have no hesitation in saying that the Japanese Government is extremely anxious to have an agreement to safeguard the position of Japanese textiles. There are many signs of compromise.[55]

This was the main thing for Fletcher, who was quite happy to fit in with the Japanese on procedures and how things appeared. The Australians weighed up the Japanese concern to save face, as if they were free of such vanity:

> At their suggestion the discussions connected with drafting will be unofficial and will not commit the Commonwealth Government in the event of any breakdown on the shipping question. Drafting to fit in with the desires of the Japanese Government and their almost childlike concern at getting the published documents drawn up in such a way as to give the impression that Japan got everything and gave nothing becomes a protracted and tedious process.[56]

Less effectively bound by the preferences of the shipping companies than by the anxiety of the textile industry, the Japanese government now demanded that the Japanese lines agree to a new pooling arrangement. Moreover, the Japanese spinning industry was the most important shipper, and once it decided that the dispute had to be settled the Japanese shipping companies themselves found it hard to persist.[57] Eastern & Australian was doubly pleased because the Japanese government agreed to have the treaty on wool and textile quotas and the arrangement between the shipping companies signed simultaneously.[58]

At Whitehall there was some interest in how the Australians had managed to achieve so much against the Japanese. P. Liesching, the Acting High Commissioner to Australia, pointed out that 'although they [E&A] are not likely to express public satisfaction with the terms of the agreement, they have in fact done well to obtain 22½%'.[59] His reading of the figures obtained from the Department of Trade and Customs showed that in 1937 E&A accounted for only 13 per cent of wool cargoes and 25 per cent of cargo from Japan. However, he was given to 'understand that the latter figure was unnaturally high owing to the Company's deliberate policy of virtually buying cargoes in order to put themselves in a good negotiating position'.[60] There were lessons to be learned. Hence on 25 July W. G. Weston from the Board of Trade wrote to F. J. Murphy at the Australian High Commission to ask if the pressure exerted by the Commonwealth government had been effective, no doubt because the Board of Trade was considering the British government's prospects in similar situations. Weston explained that the Board of Trade had 'only sketchy information' based mainly on press reports.[61] The Board of Trade's contribution to E&A's struggle had consisted of little more than a request that it be informed of what had happened.[62] The Imperial Shipping Committee acknowledged that their ability to form themselves into cartels aided by government subsidies made the Japanese lines a potent force on the Far Eastern and Pacific routes. British companies were losing market share in the trade radiating from Japan to China, India, the Pacific islands, Australia and New Zealand.[63] Intervention by the Australian government to assist E&A showed what could be achieved against the Japanese. In December 1938 the Imperial Shipping Committee accepted for the first time that British lines should receive subsidies to help them deal with Japanese competition on the routes between Japan and India, and from Japan to Australia and New Zealand. The Committee recommended British government guarantees for loans to be used to acquire new ships. Unlike direct subsidies, these guarantees did not impose a cost on British taxpayers, rather the shipping lines benefited because the guarantees would make it possible to borrow at lower rates of interest. The Treasury believed that this could be complemented by operating subsidies from the dominions.[64]

Certainly an adequate pool arrangement was not the end of the matter as far as E&A was concerned. The Australian cabinet was informed that E&A had made paltry profits and lacked the reserves that would be needed to buy new ships. On the other hand, winding up the company was not an unattractive prospect for the shareholders at this stage, because the assets were sufficient for them to be paid out in full. Given its inability to compete with the Japanese, it made commercial sense to liquidate the company before its ships were too old and its losses led it into debt. Page believed that without government aid the company would not last more than two to four years.[65] Following the deliberations of the Imperial Shipping Committee in late 1938, in February 1939 the Australians explored the possibility of British government assistance to E&A. The Australian government also asked whether E&A was likely to receive a subsidy from the British. The line's managing agents had claimed that 'the arrangement forced on the Japanese by the Australian Government ... did not yield them sufficient revenue and they therefore wanted a subsidy'.[66] However, the Ministry of Transport was still daunted by the difficulties involved in assisting British firms to counter the competition of Japanese companies that were united and enjoyed the support of Japanese merchants:

> it might be found that nothing effective could be done without pressure on the Japanese Government; and, as we had not found any means of applying pressure to that Government in order to make them desist from injuring British interests in China, it seemed doubtful whether means could be found of making them agree to reasonable arrangements for the sharing of trade between Japanese and British shipping companies.[67]

Once again it was left to the Australians to take charge of the situation. Australia's interests were both military and commercial. On 28 February

1939 Page passed on to cabinet a confidential assessment by the Defence Department. According to the Australian Naval Board it was essential to retain the sole British line operating between Australia and Japan. This would be of value in wartime for carrying troops and munitions. In addition, in war and peace it was the only safe way to carry secret agents and documents between the two countries. Eastern & Australian's ships also travelled past Japanese mandated islands 'and are thus of great intelligence value'.[68] Interestingly, the Japanese had rejected a request from the British for their naval vessels to call at Japanese mandated islands, even though Japanese warships had been given permission to visit British mandated territories.[69] The Foreign Office was interested in the relationship between military and economic planning and hence in the subsidies paid to Japanese shipping companies.[70] The Imperial Shipping Committee had also drawn attention to the strategic importance of British shipping for India and Australia in the event of war; dependence on Japanese tonnage could leave both of them vulnerable to trade embargo. From the commercial point of view, Page argued that the absence of competition from a British line would enable the Japanese to raise fare and freight rates. Moreover, if another more wide-ranging trade dispute broke out the Japanese government could require the Japanese lines to help it enforce a trade boycott. The Imperial Shipping Committee recognised that old ships could not be expected to compete with new ships. E&A hoped to acquire two new vessels at a cost of £400,000 to £500,000. The Department of Commerce set out conditions to which the company would have to agree. These included a limit on the government's liability, which would not involve an open-ended commitment. The subsidy would amount to £10–12,000 per annum. And the government would receive half of any profits over five per cent on the subscribed capital.[71]

IV

The above discussion illustrates some aspects of Anglo-Japanese rivalry in international shipping. It draws attention to the important role played by governments in what was essentially a bargaining process involving conference arrangements. Gradually British Empire governments were drawn into supporting private firms in response to the benefits enjoyed by Japanese lines as a result of the aid they received from their government. Anxious to protect their competitive advantage, the Japanese were keen to exclude the Australian government from the negotiations over the new pool. They understood only too well that once the government intervened on the side of E&A on this issue, soon enough it would be providing subsidies to ensure E&A's long-term survival. The Japanese tactic of stalling for time did not work. As time went on, Japanese textile manufacturers, who were the biggest shippers, became concerned at the delay in the completion of the trade treaty. This led to a division within the Japanese ranks, as the Japanese government leaned on the shipping companies to make a deal with E&A. There was no similar problem for E&A; nor could the Japanese neutralise the effective intelligence and astute advice coming from Lloyd in Tokyo.

The dispute between E&A and the Japanese lines also revealed the limited ability of the British government to defend the interests of British shipping companies. The British seemed to lack the will or confidence to confront the Japanese. In itself the fate of E&A was not economically important to the UK, but the British were far from indifferent to the outcome. At a time when the UK and Japan were reluctant to engage in a serious struggle on major trading and passenger routes, the conflict on the route between Australia and Japan served as a surrogate for higher stakes elsewhere. It was an indicator of the strategy the Japanese would use on other routes and how they could be countered. In contrast, the survival of E&A was perceived to be of direct commercial significance for Australia, because trade with Japan had grown in importance in the 1930s. The aggression and sureness of the Australian government contrasted with the passivity of the British. The absence of substantial co-operation between the British and Australian governments bore testimony to Australia's pursuit of independently conceived objectives and bargaining tactics. Australia was far from playing the role of the UK's conduit. In addition, by deciding to subsidise E&A's competition with the Japanese, the Australian government obtained a measure of control over E&A's operations. By binding itself financially to the government, E&A presented the Japanese with a more formidable rival. Moreover, the government's subsidy would be used to provide a better service to Australia's shippers, and challenged the Japanese further to improve their service. Although E&A got most of what it wanted, in the end a balance of Australian and Japanese interests was attained, which made it possible to avoid a competitive war with all the risks that would have accompanied it.

NOTES

1. D. Marx, *International Shipping Cartels* (Princeton, NJ, 1953), pp.80–83.
2. See for example S.G. Sturmey, *British Shipping and World Competition* (1962), Chs. IV–VI; T. Yui and K. Nakagawa (eds.), *Business History of Shipping: Strategy and Structure* (Tokyo, 1985); and T. Chida and P. N. Davies, *The Japanese Shipping and*

Shipbuilding Industries: A History of their Modern Growth (London and Atlantic Highlands, NJ, 1990).

3. K. Burley, *British Shipping and Australia, 1920–1939* (Cambridge, 1968), p.259.
4. Ibid.
5. S. Jones, *Two Centuries of Overseas Trading: The Origins and Growth of the Inchcape Group* (Basingstoke, 1986), pp.152–5.
6. AA (Australian Archives) A461, E418/2/5, Pt 1, Memorandum re Eastern and Australian Steamship Co. Ltd.
7. AA A461, E418/2/5, Pt 1, Macdonald Hamilton & Co. to J.A. Lyons, 20 July 1936.
8. AA A461, E418/2/5, Pt 1, Macdonald Hamilton & Co. to Earle Page, 8 Oct. 1936.
9. Burley, *British Shipping*, pp.32, 236, 256–7, 291–2.
10. AA A461, E418/2/5, Pt 1, Macdonald Hamilton & Co. to J. A. Lyons, 20 July 1936.
11. Ibid., 26 Aug. 1936.
12. AA CP450/6, folder 56, Macdonald Hamilton & Co. to Dr Earle Page, 12 Nov. 1936.
13. For the material in this paragraph see AA A461, E418/2/51, Pt 1, Earle Page, Minister for Commerce, For Cabinet, Eastern & Australian Shipping Company – Competition with Japanese Lines, 27 Nov. 1936.
14. For this paragraph including quotations see AA CP450/61, folder 56, Macdonald Hamilton & Co. to Dr Earle Page, 26 Feb. 1937.
15. AA CP450/6, folder 56, Macdonald Hamilton & Co. to the Secretary, Department of Commerce, 29 Oct. 1937.
16. Lloyd was advisor to the Australian Eastern Mission in 1934 and Australian Commissioner in Japan from 1935 to 1940.
17. AA CP450/6, folder 56, Macdonald Hamilton & Co. to the Secretary, Department of Commerce, 29 Oct. 1937.
18. MT (Ministry of Transport, Public Record Office, London) 9/2872, Minute Sheet, Ref. M.14077/37, 3 Nov. 1937.
19. MT 9/2872, Minute, 9 Nov. 1937.
20. BT (Board of Trade, Public Record Office, London) 188/33, Imperial Shipping Committee Minutes, 221st meeting, 26 Nov. 1937. The Imperial Shipping Committee consisted of Sir Halford J. Mackinder, the chairman; Sir Frederick Leith-Ross of the Treasury; R. M. Campbell representing New Zealand; Sir David Meek, India; Sir Henry Moore representing the colonies; W. L. Hitchens, a shipbuilder; T. Harrison Hughes, shipowner; Sir Kenneth Lee, manufacturer; D. T. Lewis, manufacturer; and F. Faraker, representing Australia.
21. AA A461, E418/2/5, Pt 1, H. J. Mackinnon to F. Faraker, 3 Dec. 1937.
22. Ibid.
23. AA A981, shipping 14, decode of cablegram to Australian Government Commissioner in Japan, Tokyo, 17 Dec. 1937.
24. Ibid., decode of cablegram form Australian Government Commissioner in Japan to Department of Commerce, 22 Dec. 1937.
25. Ibid.
26. Ibid.
27. Ibid.
28. Ibid., decode of cablegram to the Australian Government Commissioner in Japan, 24 Dec. 1937.
29. Ibid.
30. Ibid., decode of cablegram from Australian Government Commissioner in Japan, 8 Jan. 1938.
31. Ibid., decode of cablegram from the Australian Government Commissioner in Japan, 17 Jan. 1938.
32. Ibid., decode of cablegram to Australian Government Commissioner in Japan, 9 Feb. 1938.
33. Ibid.
34. Ibid., decode of cablegram from Australian Government Commissioner in Japan, 23 Feb. 1938.

35. Ibid., decode of cablegram from the Australian Government Commissioner in Japan, 28 Feb. 1938.
36. Ibid.
37. Ibid., decode of cablegram from the Australian Government Commissioner in Japan, 28 Feb. 1938.
38. Ibid., decode of cablegram to Australian Government Commissioner in Japan, 1 March 1938.
39. Ibid.
40. Ibid., decode of cablegram from the Australian Government Commissioner in Japan, 9 March 1938.
41. Ibid., cable to the Australian Government Commissioner in Japan, 10 March 1938.
42. Ibid.
43. Ibid., cable from the Australian Government Commissioner in Japan, 12 March 1938.
44. Ibid.
45. Ibid., decode of cablegram from Australian Government Commissioner in Japan, 25 March 1938.
46. AA A461, E418/2/5, decode of cablegram to Australian Government Commissioner, Tokyo, 29 March 1938.
47. Ibid., decipher of cablegram from Australian Government Commissioner, 18 April 1938.
48. Ibid
49. AA A461, E418/2/5, Macdonald Hamilton & Co. to A. Cameron, 18 May 1938.
50. AA A981, shipping 14, decipher of cablegram to Australian Government Commissioner in Japan, 14 April 1938.
51. Ibid., Japan – Note on Conversations, 8 June 1938.
52. Ibid., Lord Inchcape to Dr Earle Page, 8 June 1938.
53. S. Jones, 'The Decline of British Maritime Enterprise in Australia: The Example of the Australasian United Steam Navigation Company, 1887–1961', *Business History*, Vol.XXVII No. 1 (1985), pp.59–74.
54. AA A981, shipping 14, Japan – Trade and Shipping Negotiations, 10 June 1938.
55. Ibid.
56. Ibid.
57. Chida and Davies, *Japanese Shipping*, p.21, show that the cotton spinning companies often exerted a decisive influence over the Japanese shipping companies.
58. AA A981, shipping 14, Australia–Japan Negotiations. The Minister: From Assistant Treaties Officer, 14 June 1938.
59. BT 11/936, P. Liesching to the Secretary of State for Dominion Affairs, 4 July 1938.
60. Ibid.
61. MT 9/2872, W. G. Weston to F. J. Murphy, 25 July 1938.
62. MT 9/2872, E. McCarthy, Acting Secretary. Transmitted through the Prime Minister's Department – Memorandum, 4 Aug. 1938, to Official Secretary High Commissioner's Office, London.
63. BT 188/33, Imperial Shipping Committee, Minutes of 223rd meeting, 22 July 1938.
64. Ibid., Minutes of 224th meeting, 9 Dec. 1938.
65. AA A461, E418/2/5, Department of Commerce, E. & A. Shipping Company – Request for Government Assistance, Earle Page, Minister for Commerce.
66. MT 9/2872, Shipping Assistance Enquiry by Australian Government, 25 Feb. 1939.
67. Ibid.
68. AA A461, E418/2/5, Department of Commerce, E. & A. Shipping Company – Request for Government Assistance, Earle Page, Minister for Commerce, 28 Feb. 1939.
69. FO (Foreign Office, Public Record Office, London) 410/98, Mr Eden to Sir R. Clive, Tokyo, 13 Jan. 1937.
70. FO 436/1, Mr Dodds to Mr Eden, 4 June 1937, Memorandum respecting Government Assistance to Japanese Shipping and Shipbuilding.
71. AA A461, E418/2/5, Department of Commerce, E. & A. Shipping Company – Request for Government Assistance, Earle Page, Minister for Commerce, 28 Feb. 1939.

British Businessmen As Wealth-holders, 1870–1914: A Response

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Hartmut Berghoff's 'British Businessmen As Wealth-holders, 1870–1914: A Closer Look' (April 1991), which takes issue with my previous research at several important points, is an interesting piece of work which in part raises some significant points about the use of the probate records for tracing broad trends in Britain's economic evolution during the late Victorian and Edwardian period. It follows closely upon another important article by the same author, 'Public Schools and the Decline of the British Economy, 1870–1914' (*Past and Present*, No.129, November 1990), with whose conclusions I am in complete agreement. Nevertheless, 'British Businessmen as Wealth-holders, 1870–1914: A Closer Look' is, I believe, misleading in most if not all of the major points it makes, and I would like to take this opportunity to point out the reasons for my view.[1]

Berghoff's first and most important point is an attempt to refute my 'concept of a general inferiority in financial power of provincial businessmen in comparison to metropolitan [i.e., London] ones'. This he does by a comparison of the wealth left at death, according to the probate records, of 407 City of London bankers studied by Y. Cassis in his book, *Les Banquiers de la City à l'Époque Edouardienne (1890–1914)* (Geneva, 1984) with Berghoff's own sample of 1,328 provincial businessmen from Birmingham, Bristol, and Manchester who were active between 1870 and 1914.[2] He finds that, although the distribution of estates left at death was indeed higher among the London bankers in this sample than among all provincial businessmen in his sample, a comparison between the London bankers and a smaller group of 180 big provincial industrialists – defined as 'owners and top managers of firms with 1000 or more employees' – shows clearly that the range in size of estates left at death among the two groups was virtually identical.[3] From this Berghoff apparently concludes that the biggest provincial industrialists 'could hold their own' against London's leading bankers in terms of wealth, and that this fact provides some kind of refutation of my research.[4]

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My first response to this conclusion is simply 'so what?' No one doubts or denies – certainly I do not – that there were many provincial industrialists who were very rich. In a 1974 article, for instance, I published a complete list of all millionaire estates left between 1809 and 1949, wherein one can read the names of these provincial millionaires in a precise way – the Coatses of Scotland, the Willses of Bristol, multi-millionaire manufacturers like Sir Robert Peel, 1st Bt, John Rylands, Sir Charles Tennant, and many others.[5] I have comprehensive manuscript lists of all estates left in Britain between 1809 and 1899 – of which more anon – worth £100,000 or more; most indubitably, many of these were provincial industrialists. My point was that they were outnumbered by London businessmen and professionals. The evidence provided by Berghoff in no way refutes this point or even addresses it, although his research is certainly useful in understanding the nature of the economic elite of the three cities he has studied.

Dr Berghoff's two samples are, unfortunately, both flawed and dissimilar in several salient characteristics and the conclusions he draws from them are, therefore, misleading. First, he is not comparing like with like. Neither of his two samples – the larger and the smaller – is comparable with Cassis' sample of bankers, the larger one consisting of local businessmen who left £50,000 or more (£40,000 in Bristol) plus those appearing in local 'Who's whos' and other works of this type; his smaller sample consists of big industrialists – 'owners and top managers' of firms with 1,000 or more employees. Although Berghoff argues that there is a very clear comparability with Cassis' sample, in fact there are important differences: Cassis' group of bankers includes all traceable *directors* of the Bank of England and of 60 London banks of the period, banks ranging in importance from Barclay & Co., Baring Brothers, and N.M. Rothschild & Sons down to virtually unknown minor houses, many of which were absorbed by the larger banks in this period, including firms such as Allen, Harvey & Ross; Brightwen & Co.; King & Foa; the London & River Plate Bank; and White Shaxson, whose very names are probably unknown, I would venture to say, even to specialists in this area.[6] Among the 460 directors in Cassis' study – of whom he has traced the probate valuation at death of 407 – were, as well, 47 salaried managing directors, who were, in many cases, unlikely to have been independently wealthy as they were not proprietors of their firms.[7] Unlike Berghoff's, Cassis' probate valuations do not set an arbitrary lower limit for exclusion of £50,000, thus *ipso facto* excluding the poorer provincial entrepreneurs.[8] Many of his directors – younger sons and distant relatives of the chief proprietor of the larger banking firms, proprietors of his smaller houses, and so on – were certainly unlikely to have left more than

£50,000 or £100,000, and it is actually surprising that only 20.9 per cent left under £50,000 and 17.9 per cent between £50,000 and £100,000.[9] Nor is Berghoff's second smaller sample any more comparable. It consists, as noted, of 'owners and top managers' of firms with 1,000 or more employees, and would thus be comparable not with Cassis' *whole* sample but with a smaller group consisting of the chief partner or partners of the largest 15 or 20 houses from Cassis' list of 60; it would be virtually certain that the median wealth of this smaller group would be far higher than that of his larger group of 407.

Nor is this all. Berghoff is comparing virtually the *totality* of the business elite in three major provincial cities with a tiny portion of London's business elite.[10] As we have noted, it is a matter of numbers, of London's relative superiority in numbers at similar levels of business success and wealth. Berghoff's group of big provincial industrialists, virtually identical in median probate valuation to Cassis' London group, comprises only 180 individuals compared with 407 in Cassis' sample. While Berghoff's small group of 180 includes, presumably, every truly significant industrialist in two major industrial cities, Manchester and Birmingham, and a third city, Bristol, of the second rank, Cassis' much larger sample comprises only a fraction of London's business elite, excluding all independent financiers not connected with any of his 60 banks, as well as all stockbrokers, insurance brokers, large-scale merchants, retailers, shipowners, manufacturers, and all professional men, among them the whole of the London bar, Harley Street physicians, the senior civil service, the press, and so on. Their numbers at a similar degree of wealth, prominence, or significance to Berghoff's samples would, surely, dwarf these provincial groups in size by many orders of magnitude.[11]

Another point which should be considered is that the probate valuations excluded the value of unsettled land until 1898 and of settled land until 1926; neither Berghoff nor Cassis appear to have compensated for this. Although I have argued vigorously that few nineteenth-century businessmen purchased land on any scale, there may have been particular group exceptions to this, especially as the scale of individual land purchase seems to have varied according to the wealth of the businessman or dynasty, with the wealthiest – by and large – purchasing the most land.[12] One partial exception to this may have been London bankers and merchant bankers; certainly the very wealthiest ones often bought significant amounts of land, although representing only a small fraction of their total capital. In 1883, for instance, Sir Nathaniel Rothschild owned 15,378 acres worth £28,901 *per annum*, Lord Northbrook (T.G. Baring) owned 10,059 acres yielding £12,710, Joseph Barclay 3,816 acres worth £4,766, and so on. The annual income of this land must be multiplied by

30, and added to the probate valuation recorded at Somerset House to obtain the man's accurate gross worth at death. Of course some industrialists would have purchased land on a significant scale, but if City bankers were more likely to have purchased land than were industrialists – which seems very likely – then this raises the median wealth of the bankers in question *via-à-vis* the industrialists, perhaps by a significant amount. Naturally, however, only very searching research would be able to confirm or disconfirm this suggestion.

Dr Berghoff's other central contention has several main planks. It is that I exaggerate the importance of commercial/financial wealth and income for the entirety of the Victorian middle classes by a false inference from the probate evidence for a handful of millionaires to the middle class as a whole: in Berghoff's words I 'certainly take [my] point too far. It is simply not permissible to make a statement about "the entire middle class" if you have confined yourself to people with probates of more than £500,000'.[13]

Dr Berghoff goes on from this, criticising Cassis rather than me, to claim that industrial fortunes 'could on average well match the wealth earned by London's bankers'.[14] Finally, he proceeds to make the extraordinary statement that 'If Rubinstein's assertion of the universal superiority of commercial-financial wealth to industrial fortunes was true, it would be true within the provincial context'.[15]

None of these assertions is accurate, and it is highly instructive, after seeing why they are not, to consider Dr Berghoff's claims in the overall context of the evolution of the British wealth structure during the nineteenth century. To take the first of his assertions, it is certainly correct to note that any inference about the whole of the Victorian middle classes drawn from my evidence on the top wealth-holders alone would be 'taking a point too far', and I have not done this. My claims about the dominance of London and of commerce and finance *vis-à-vis* manufacturing are not taken from the probate records at all, but from the income tax data, an entirely different source but one which points in exactly the same direction. His quotation from my 1976 article is wholly taken out of context without noting that it refers to these *income tax* sources rather than to the probate records.[16] Apart from the snippet about income tax in this article, I have written several other articles, based upon fresh evidence from the income tax statistics, which point to exactly the same conclusion – the predominance of London and of commerce, finance, and the professions for the middle classes as a whole, and to the relative unimportance of Britain's industrial centres for the middle classes, although in relative terms the middle classes of these areas were growing faster than London from the 1810s to the 1860s (but not afterwards).[17]

The chronology of these relative growth trends can be traced in some detail, as we shall see.

Berghoff's last point among these is even stranger. It simply does not follow from the numerical superiority of financial and commercial wealth-holders in Britain during the whole period 1809–1914 that this is true in some 'universal' sense 'within the provincial context' in every case. Plainly and obviously it is not; I have asserted no such thing, and no sensible historian would do so. It is as obvious as the day is long that the economic elite of a mainly industrial city like, say, Bolton or Oldham, will differ markedly from a chiefly commercial one like Edinburgh, Liverpool, or Bristol in 1820.[18] Indeed, one of the merits of the probate method of approaching this subject is that, being both objective and comprehensive, it allows us to ascertain a revealing anatomy of each locale that accurately brings out these nuances. There is no necessary reason why 'commercial-financial wealth' should always be 'superior' – however defined – to industrial wealth; when true, this is purely a happenstance accident of the economic development of each place. Given Britain's well-known failure to produce a banking-dominated 'finance capital' of Marxist theory, it seems clear that commercial and financial wealth held no special privileged status in many cities and towns. Having said this, however, one must also point out that financial and commercial wealth-holders were much more numerous in 'industrial' towns and cities than one might suppose in advance.

Perhaps we can better understand the differences in our basic findings by properly situating Berghoff's conclusions into a much broader framework of the evolution of the wealth structure of nineteenth-century Britain which will, I think, be illuminating. In a 1988 essay on the geographical distribution of taxable *income* in Britain – that is, of persons or firms with an annual income of £100 or £150 or more and hence subject to the income tax when it was levied – a comparison was made between London and the Home Counties on the one hand, and of Lancashire and Yorkshire on the other, between 1806 and 1911/12; in their respective share of the national totals of taxable income.[19] This indicated that middle-class incomes in Lancashire and Yorkshire grew sharply after the Napoleonic period, peaking – relative to London – around 1860–65, and then declined; London's share bottomed in the 1850s and then again grew strongly from the 1870s onward, reaching nearly the same percentage in the national total by 1911/12 (the last year in the study) as in the Napoleonic era. Significantly, at no stage does middle-class income in the combined total of Lancashire and Yorkshire ever 'catch up' with London's total.

Wealth is *income* which has been saved and invested, and it seems reasonable to infer that the major trends in income earned by those the middle and upper classes (that is, those subject to income tax) will be demonstrated by a geographical analysis of the trends in wealth-leaving ten, 20, or 30 years later, that is, that significant changes in the geographical distribution of middle- and upper-class incomes will show broadly similar patterns when these income-earners die and are subject to probate, which is probably – very roughly – between ten and 30 years after these income-earners reach the peak of their business and professional success.

The trends suggested by this data are broadly evident in the geographical and occupational distribution of the millionaires and half-millionaires in my study of great *wealth*, with the northern and manufacturing segment growing some decades after the dates indicated by the *income* trends above, peaking in the late nineteenth century and then declining in the Edwardian period.[20] Some consideration of these broad trends allows us, too, to situate Berghoff's findings in what is, in my view, their proper context. My study was one of all wealth-holders, regardless of their source of wealth, leaving £500,000 or more during the whole period from 1809–1939. Berghoff's study is a much narrower one: of business leaders in three provincial cities who flourished during the period 1870–1914, and a comparison of them with an equally narrow selection of London bankers of the period 1890–1914. In my view, the very narrowness of these samples precludes any valid far-reaching inferences whatever concerning the characteristics of the British business class as a whole, such as Dr Berghoff repeatedly draws (generally in order to criticize my research), although they are certainly interesting if related specifically to the locale and time-period from which they are drawn. All of Dr Berghoff's research relates to one particular time-period, the late Victorian and Edwardian era, and to three provincial cities – albeit three of the most important ones. Dr Berghoff's conclusions are simply those which may be drawn from his limited sample and do not present an accurate view of the business classes as a whole in nineteenth-century Britain. If, instead of Manchester, Birmingham, and Bristol he had studied Aylesbury, Redditch, and Whitechapel, I am sure he would have found many more commercial duck-breeders, needle makers, and old clothes dealers among the local capitalists than I did in my study of top wealth-holders, but would anyone draw any far-reaching inferences about the evolution of the British business elite from these facts? Similarly, I would fully expect that an analysis of the biggest businessmen and leading professionals in Liverpool, Edinburgh, and Bristol in 1820 would have found yet another pattern to their wealth structures, with, in all likelihood, much more large-scale commercial wealth and 'old money'. Had he studied Dublin, he would, without question, have found that my research has seriously understated the number of Roman Catholic businessmen compared with his sample.

I would suggest, however, that this is not a valid way to proceed. The only inferences which may properly be drawn of the evolution of the British wealth structure is through an examination of the nation as a whole or of some truly random national sample of that total structure. For instance, if Dr Berghoff had carefully traced the career patterns and social origins of everyone leaving, say, £40,000 or more in Britain in 1870–72, 1897–99, and 1910–12, one could indeed place great confidence in these findings, and were they materially different from mine that fact would have to be carefully noted. A definitive answer to the questions studied by Dr. Berghoff can only be given by a comprehensive study, examining *every* estate of, say, £50,000 or more left in Britain from the early nineteenth century onwards. As it happens, I am currently engaged in a research project to examine the careers of every person leaving £100,000 or more during the period from 1809, when the probate records begin in a usable form, to 1899. At this stage, complete data on the occupations and geographical venues of wealth-holders leaving £100,000 or more during 1809–58 and 1873–75 has been completed and can be summarised.[21] Wealth-holders engaged in commercial and financial trades totalled 43.8 per cent of the known total of 210 wealth-holders at this level deceased in 1809–19, 41.1 per cent of 270 deceased in 1820–29, and 44.5 per cent of 317 deceased in 1830–39. Thereafter the total engaged in these occupations, though the largest single group, declined to 32.9 per cent in 1840–49, 34.8 per cent in 1850–58, and then rose to 42.5 per cent in 1873–5. Manufacturing and industry, in contrast, rose fairly steadily, with the periodic percentages as follows: 1809–19, 10.5 per cent; 1820–29, 8.9 per cent; 1830–39, 10.1 per cent; 1840–49, 17.4 per cent; 1850–58, 23.0 per cent; 1873–75, 28.7 per cent. This rise is, however, insufficient to surpass the commercial/financial sector. A very similar trend is evident in the comparison between London and the northern industrial centres. London comprised the business venue of 82.1 per cent of 145 wealth-holders with a known business location deceased in 1809–19, 51.7 per cent of 190 in 1820–29, and 73.0 per cent of 230 in 1830–39. This declined to 56.9 per cent of 239 in 1840–49, 56.5 per cent of 193 in 1850–58, and 46.7 per cent of 302 in 1873–75. The combined totals for Lancashire, Yorkshire and the West Midlands rose from 2.8 per cent in 1809–19 to 22.8 per cent in 1850–58 and 34.1 per cent in 1873–75 – again, a steep rise, but insufficient to catch up with London. Whether the picture changes by the 1890s must await further analysis.[22]

It will be seen that the pattern here very much mirrors that of the income tax statistics, with the suggested time-lag. There is a rapid growth in manufacturing and industrial wealth, and an equally rapid growth in northern-based fortunes of £100,000, which are, however, insufficient to overtake the enormous lead of London and commerce finance.

We are now in a position, however, to situate Dr Berghoff's analysis in a wider context. He is dealing with two of the foremost industrial cities, exclusively at a period when they were at their absolute peak as manufacturing and business centres, plus a third city, Bristol, which changed significantly in nature from an exclusively commercial centre of great importance to one with an important manufacturing component, especially, of course, W.D. & H.O. Wills, the tobacco manufacturers, and its associated companies.[23] He is comparing these selected groups with a small component of London's business elite. Beyond this we cannot yet go until more evidence has been gathered. It is, however, reasonably clear that his wider conclusions simply cannot be applied to the period before about 1870, when the London wealth elite was plainly predominant by many orders of magnitude.

Dr Berghoff raises two further matters of importance. One is a critique of my findings on religion and entrepreneurship. I believe that Dr Berghoff has not accurately presented my main conclusions. Dr Berghoff claims that I see the low percentage of dissenters among top wealth-holders as reflecting the fact that wealth-holders seemed to be randomly distributed, with religious ratios reflective of general population trends.[24] Although this is true, my main conclusion was not that some religious groups are (or are not) more successful than others, but that certain trades or occupations are inherently more profitable than others, and offered far more room for the accumulation of significant fortunes; all the evidence suggests that commerce and finance were more profitable than industry, and these attracted far more Anglicans (and immigrant groups like Jews) than did industry.[25] As I carefully noted in *Men of Property*, the percentage of wealthy dissenters *rose* significantly over time, which is inconsistent with the well-known argument that dissenters 'sparked' the industrial revolution, if the implication here is that these industries generated massive fortunes.[26] It is, however, fully consistent with the broad secular changes in middle-class incomes and in estates of £100,000 and more which we examined above, whereby the northern, manufacturing, and, presumably, more dissenting portion of the business class grew disproportionately faster from 1810/40 through the late nineteenth century, and then declined *vis-à-vis* the Anglican south. It is also probably consistent with what is known of the political consequences of these socio-economic changes, with the national political power of dissent peaking in the late nineteenth century (and especially at the 1906

General Election, when dissent may actually have already been in decline), as well as in the growth of a self-confident and articulate urban civic elite – Joseph Chamberlain being probably the best-known exemplar of this elite – at the same time, followed by its catastrophic decline after the First World War, or even just before, with the rise of Labour.

The apparent affinity of dissent for industrialism and manufacturing can only be the subject for speculation: whether this was generated by (for example) Unitarian and other 'cousinhoods' and kinship networks, or by something in the religious doctrine and social position of dissenters which emphasised the actual production of goods (instead of financial manipulation), the employment of technology, better management of a labour force, the Puritanical ploughing back of profits, and so on, or by the reluctance of higher-status Anglicans to participate in lower-status trades, or by some combination of these factors, can only be matters for controversy. Nevertheless, it appears to be a national pattern, bearing in mind that commerce and finance, *whichever groups* successfully participated in them, were inherently likely to generate more large fortunes than was industry.

It is therefore particularly egregious of Dr Berghoff to claim that my views about dissent and entrepreneurship are applied by me 'to the entire entrepreneurial class' with insufficient evidence, when he is clearly guilty of precisely this failing and I am not.[27] His view on the size of the dissenting portion among businessmen is, after all, not drawn from a national sample, but from three provincial cities, in the two largest of which dissent was always particularly strong, and at a time when dissent, and trades in which dissent was particularly prominent, were at their very peak. *Even so*, by a narrow majority there were more Anglicans than dissenters in Berghoff's study![28]

Dr Berghoff further suggests that the higher percentage of nonconformists among self-made men – those who founded their own firms – among his businessmen may have been due to 'a steady movement into the Church of England ... nonconformist business dynasties often, though not always, broke their family tradition', and that 'many businessmen from long established families displayed a regular tendency to convert to Anglicanism'.[29] These tendencies were, of course, perfectly valid for many entrepreneural dynasties. Yet Berghoff fails to provide a shred of evidence that the long-established families in his study actually demonstrated this process of conversion in numbers requisite to influence his findings. Remarkably, he has simply asserted that the higher percentage of Anglicans among old rather than new families was due to religious conversion from dissent to Anglicanism, without investigating the actual religious histories of these families in any way to see if this was the case.

Yet it is entirely possible that another sequence of events may have been at work here, with older business dynasties situated in mercantile or other trades where Anglicans always outnumbered dissenters, and newer families in newer industries with disproportionately more dissenters, but with no real pattern of religious conversion. Furthermore, as families waxed successful over several generations, intermarriage with established gentry or old monied families, chiefly Anglican, was no doubt common; since a man has two parents, the 'original' religious affiliation in such cases is ambiguous, and it is wrong blandly to suggest that this represents a process of religious conversion. I would, finally, reject Dr Berghoff's contention that because my 'sample too is strongly biased toward long-established families who ... tended to Anglicanism rather than nonconformity', this 'single reason alone explains the low proportion of dissenters' in my study.[30] In my study – as was made perfectly clear in my book – anyone with a traceable dissenting grandparent was counted as a dissenter *even if* that person was known to have been an Anglican.[31] If anything, this procedure biases the conclusions toward *over-representing* dissenters, not merely because of the counting of grandfathers, but because Anglicans, especially in London, are harder to trace than dissenters, who often have good sectarian records.[32] In fact, as with other aspects of this question, the most judicious approach to this matter is that broad changes in the economy systematically advantaged particular groups with an affinity to that sector at that time. The day of the dissenters came in the mid to late nineteenth century, and this systematic process of group advantaging was more important, in all likelihood, than the more obvious processes of conversion and inter-marriage which often went with social mobility.

The last point which Dr Berghoff raises is the separate classification of the 'Food-Drink-Tobacco' occupational sector.[33] Dr Berghoff clearly has a point here, although the matter is more complex than he seems to think. The occupational structure employed by me is taken from the Standard Industrial Classification schema, which categorises the occupations in this way.[34] The food-drink-tobacco sector did not seem to me, and does not seem to me, to be a part of manufacturing industry in the same sense as the other trades categorised here, and Dr Berghoff offers no compelling reason why they should be classified here. Newspapers, publishing, and other miscellaneous trades (generally among wealth-holders, goldsmiths, silversmiths, and proprietors of gaming clubs) also seemed to me to be unclassifiable with the other categories, and were listed separately, in a separate category. If Dr Berghoff wishes to conflate the food-drink-tobacco category with other manufacturing industries (although brewing, with its network of tied houses, was, probably, substantially commercial in nature, with the industry's profits derived directly from the sale of beer rather than from its fermentation) of course he is free to do so. On the other hand, perhaps he should withhold a final judgment on this matter until we have knowledge of the characteristics of a much wider and more comprehensive group of wealth-holders, down to the £100,000 level or even below. Through the mid-nineteenth century at any rate, this category appears to be considerably less important than at the very highest levels of wealth-holding.

To summarise, I believe that Dr Berghoff is substantially wrong in all, or virtually all of the points he has made against me in his article, and that the fundamental reason for this is to be found in the nature of his samples, which derive from particular venues at particular times, whose choice has had the effect of biasing his conclusions. This points yet again to the necessity in this field of samples that are truly comprehensive and objective. On the other hand, Dr Berghoff's samples and his findings are, surely, of the highest significance for local studies in this area, and will clearly add much to our knowledge of the cities he has studied.

NOTES

1. Berghoff's article is the sixth I have seen over the past few years which attacks my research over one or another point. Other examples of this include N.J. Morgan and M.S. Moss, 'Listing the Wealthy in Scotland', *Bulletin of the Institute of Historical Research* (1986); M. Daunton, 'Gentlemanly Capitalism and British Industry, 1820–1914', *Past and Present*, No. 122 (Feb. 1989); F.M.L. Thompson, 'Life After Death: How Successful Nineteenth Century Businessmen Disposed of Their Fortunes', *Economic History Review*, 2nd series, Vol.XLIII (1990); S. Gunn, 'The "Failure" of the Victorian Middle Class: A Critique', in J. Wolff and J. Seed (eds.), *The Culture of Capital: Art, Power and the Nineteenth Century Middle Class* (Manchester, 1988); and R. Pahl, 'New Rich, Old Rich, Stinking Rich?' *Social History*, August 1990. So far as I can ascertain, virtually all of these attacks are inaccurate, almost certainly because of the lack of real familiarity on the part of their authors with the sources I employ, especially the probate records. Although I will suggest here that Dr Berghoff is also largely inaccurate in his conclusions, he at least has a wide and genuine familiarity with these sources, something lacking in most other papers of this type. Although hitherto I had hoped to 'save up' each of the points of criticism for an appropriate wide-ranging response, I now have a policy of replying to them as soon as possible; hence this paper, as well as my '"Gentlemanly Capitalism", British Finance and Industry, 1820–1914: A Response', *Past and Present*, No. 132 (Aug. 1991); 'Cutting Up Rich: A Reply to F.M.L. Thompson', *Economic History Review*, forthcoming; and '"Stinking Rich": A Response', *Social History*, Vol. 16 (1991).
2. Berghoff, 'A Closer Look', pp.222–6.
3. Ibid., Table, p.224.
4. Ibid., p.225.
5. 'British Millionaires, 1809–1914', *Bulletin of the Institute of Historical Research* (1974).
6. Y. Cassis, *Les Banquiers de la City à l'Epoque Edouardienne (1890–1914)* (Geneva, 1984), pp.16–17.
7. Ibid., Table, p.224
8. Despite this criterion, Berghoff's larger sample includes 43.4 per cent who left under

£50,000, his lower limit; evidently these qualified as local notables by inclusion in local 'Who's Whos'.

9. Berghoff, 'A Closer Look', Table, p.224.
10. Berghoff's claim that Cassis 'selected a real top elite by excluding managers and little-known bankers' (p.225) is clearly misleading, as Cassis has included many little-known banks and 47 salaried managers. Similarly, Berghoff's statement that his comparison 'between City bankers and big managers is much more appropriate because both groups clearly represented the economic elites of their respective towns' (p.225) is also rather misleading because the London sample includes only a small part of that elite while it comprises banking directors and directors of smaller banks as well the very largest and most important bankers. Berghoff's statement (p.225) that 'a City banker was as untypical of a London businessman as an industrial magnate of a provincial entrepreneur', although superfically plausible, is made with no evidence at all. 'Industrial magnates' in provincial industrial cities *were* often the economic elite of their towns, while City bankers were only a part of London's economic elite. Finally, Berghoff's assertion, in his footnote 15, that my 'criteria of assigning businessmen to towns are not fully comprehensible. Most of the time he seems to use people's address[es] rather than the place of their business' is totally false. In the first place – as I assert over and over again – I always use the chief business venue of every person in my study to 'assign' him to a particular venue, going to enormous lengths, including the invariable consultation of numerous local directories and other local sources, to track this down with all possible accuracy. In the second place, Berghoff cannot possibly have any idea of the 'town' to which my wealth-holders are 'assigned', having had no access to my notebooks or records – although I would willingly have given him any desired information on this point – and having seen only the anonymous tables of geographical venue in my published works. Berghoff goes on from there (ibid.) to claim that 'This is the main reason for the stunning underrepresentation of Manchester, for example, because many of the town's leading entrepreneurs lived just outside the municipal borders or had complementary business interests in Lancashire'. Again, this is totally false. If a wealth-holder's chief factory or business venue was in Manchester, he would have been classified with Manchester, whether he lived there, just outside the city, or in China. The reason for the 'stunning underrepresentation' of Manchester is simply that it produced relatively few local men who left £500,000 or more. But perhaps Dr Berghoff is aware of some wealth-holders who have been wrongly classified by me? I would be happy to consider them on a case-by-case basis.
11. Nor does Cassis' sample include the traditional landed aristocracy, for whom London was home much of the year. On page 44 of my book *Men of Property* there is a table of the three top wealth-leavers during each 30-year period from 1809–1939. Among those deceased after 1870 were four Londoners (in the sense of operating wholly or chiefly from London as a business venue). Three of these would not have been included in Cassis' study even if he had begun in 1870 rather than 1890, although two, Sir John Ellerman, the financier and shipping magnate who left £37 million in 1933, and Charles Morrison, the warehouseman and merchant banker who left £11 million in 1909, were actively engaged in finance. Only Herman, Baron de Stern, who left about £3.5 million in 1887, is included in Cassis' study, while the fourth Londoner, Giles Loder (d. 1871), a Russian merchant who left £2.9 million, of course would not be included either.
12. See my 'New Men of Wealth and the Purchase of Land in Nineteeth-Century Britain', *Past and Present*, No. 92 (1981).
13. Berghoff, 'A Closer Look', p.228.
14. Ibid., p.229.
15. Ibid
16. That is, the sentence in Berghoff's article followed by his footnote 26. This is made abundantly clear in my 1976 article from which this quotation is drawn, and I am at a loss to understand why Berghoff makes this claim.
17. 'The Geographical Distribution of Middle-Class Income in Britain, 1800–1914', in W.D. Rubinstein, *Elites and the Wealthy in Modern British History: Essays in Social*

and Economic History (Brighton, Sussex, 1987), pp.83–118, and 'The Size and Distribution of the English Middle Classes in Britain, 1800–1914', *Historical Research* 61 (No. 144), 1988. Dr Berghoff did not, apparently know of these articles although they appeared before this article was written.

18. Although even in chiefly industrial manufacturing cities, detailed research is likely to show that merchants, bankers, and other non-industrial businessmen were surprisingly numerous, as the recent searching study of late Victorian Glasgow by Stana Nanadic has indicated in her 'Businessmen, the Urban Middle Classes and the "Dominance" of Manufacturers in Nineteenth-Century Britain', *Economic History Review*, 2nd series, Vol. XLIV (1991).
19. 'Geographical Distribution', ibid., p.91. No income tax was levied between 1815 and 1842. For the complexities of the income tax, see this essay.
20. W.D. Rubinstein, *Men of Property*, pp.67, 103–5.
21. Except for 1855, where data collection is still proceeding. There is no reason to suppose that 1855 is anomalous in any way. It is worth reiterating that, contrary to what Dr Berghoff misleadingly asserts (see note 10 above), wealth-holders are always classified as to geographical venue where their chief business enterprise was located, not where they lived. I am grateful to my research assitant in London, Carole Taylor, for much of the data collection. More comprehensive information on these wealth-holders of 1809–39 can be found in my article 'The Structure of Wealth-holding in Britain, 1809–39: A Preliminary Anatomy,' *Historical Research*, forthcoming.
22. The totals here exclude unknowns and foreigners, and for business venues, those who could not readily be assigned to a particular geographical venue (e.g., military officers) as well as all landowners. The 1873–75 figures are for England and Wales only and exclude estates probated in Scotland and Ireland.
23. All of the earlier (pre-1859) Bristol wealth-holders in my study were in the commercial/financial sector, as bankers, merchants, West Indies traders, etc.
24. Berghoff, 'A Closer Look', pp.231–2.
25. *Men of Property*, pp.159, 162.
26. Ibid., p.155.
27. Ibid.
28. Berghoff, 'A Closer Look', pp.231–2.
29. Ibid., p.232.
30. Ibid.
31. Ibid., *Men of Property*, pp.159, 162.
32. In fact, I probably devoted more effort to ascertaining religious origins than to any other social characteristic, writing on innumerable occasions to local record offices, vicarages, cemeteries, denominational record centres, etc. to establish the facts as carefully as possible.
33. Berghoff, 'A Closer Look', pp.227–8.
34. *Men of Property*, pp.56–9.

A Reply To W. D. Rubinstein's Response

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Professor Rubinstein is very worried about the comparison between Dr Cassis' and my data. Although he does not seem to be aware that the particular table in Cassis' book I referred to was composed 'A l'exclusion des directeurs généraux',[1] as the author unambigiously states, I accept his criticism up to a point. Comparing data put together by different people using similar, but not identical methods is always problematical. Nevertheless, Rubinstein cannot seriously plead for the end of all comparisons across the borders of different data bases. In my article I tried to keep the differences in composition and quantity of the samples in mind and was anxious for very careful wording. I never claimed that provincial industry overtook London's finance in terms of cumulated wealth but spoke of 'a small group of provincial factory owners who, financially, could hold their own against London bankers'.[2] My point was to demonstrate that lack of wealth on the part of provincial businessmen is not sufficient explanation for the economic and social divide between London and the rest of the country. There must have been social, cultural, and religious factors at work at both ends preventing an integration even of those with similar levels of wealth.

Professor Rubinstein states that I 'set an arbitrary lower limit for exclusion of £50,000, thus *ipso facto* excluding the poorer provincial entrepreneurs'. This figure by no means denotes an exact borderline in the sense that one could not choose £55,000 or £60,000, but it is a sensible guideline for approximating the lower edge of upper-middle-class wealth in the towns analysed.[3] Therefore it is as useful or arbitrary as any limit Professor Rubinstein sets for what he calls 'wealth-holding'. Nonetheless, I very strongly contradict the allegation of *ipso facto* exclusion. Being aware of the shortcomings of relying on the probates alone, I went to great lengths balancing this method by analysing newspapers and other local sources. This led to the inclusion of many prominent businessmen whose probates were below £50,000, were not mentioned in the 'Recent Wills' columns, or were assessed elsewhere. Thus *ipso facto* exclusion is not my problem at all but first and foremost Rubinstein's very own. He

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excludes anyone with a penny less than his limit, not making any compensation for *inter vivos* gifts, tax evasion, and other possible ways of wealth drainage before death, such as bankruptcies, conspicuous consumption, charitable donations, business losses and the like.[4]

In quoting Professor Rubinstein's 1977 article, I was well aware that he was referring to income tax under Schedule D rather than probates. Still my quotation was not 'out of context' because he claims that both parameters prove the same phenomenon. This may well be so, but they differ quite substantially. First, this particular tax bracket did not record all middle-class income. Second, income tax of all categories was also levied on non-middle-class revenue. Third, income does not automatically convert into wealth. Fourth, wealth, as defined by the probates, does not exclusively stem from income earned during one's own lifetime. Fifth, for the analysis of important entrepreneurs, income tax statistics (Schedule D and E) are not very useful, as they conflate their tax payments with those of professionals, public officials, white-collar employees, rentiers, shopkeepers and probably even parts of the upper-working class.

Rubinstein criticises Cassis and me for not having 'compensated for' the exclusion of land from the probate valuations. It is amazing to read this, as he does not clear this hurdle himself.

As Rubinstein has lowered his definition of wealth to £100,000 and is currently undergoing the painstaking work of analysing all nineteenth-century owners of such fortunes, it will soon be possible to judge whether his yet unproven theory that fortunes of £500,000+ were distributed in a similar way to the ones further down the wealth scale can be confirmed. According to his new results this seems to be the case for the first two-thirds of the century, although London's lead was continuously diminishing and industry almost trebling its share. The key question is whether these trends continue or whether they are reversed in the late nineteenth-century. Even after Rubinstein has finished his enormous project, some doubts will remain. First, probates only record wealth at death. Second, wealthy businessmen are not identical with all important businessmen. Third, we must not forget the inevitable time lag. Closing his files in 1899 means that he will miss many important nineteenth-century entrepreneurs, for quite a high number of them only died after the turn of the century.[5]

Even if London's overwhelming lead is to be confirmed by Rubinstein's expanded data, many questions will still have to be answered. In which way did it affect Britain's industrial development? Is this wealth structure characteristic of nations with metropolitan capitals that attract and generate money for reasons of their own? Is industry inherently less lucrative than finance? There seems to be an infinite scope for future comparative studies on these questions.[6]

Rubinstein criticises my data base for its obvious regional and temporal limitations. First, I never applied any of my results to the time before 1870 and after 1914. Second, of course, my data is regional, but it covers the whole upper stratum of three important local business communities. Third, it will be difficult to argue that Birmingham and Manchester were atypical towns, as far as big provincial venues of industry go. Rubinstein's contention totally misses the point. I deliberately did not include 'Aylesbury duck-breeders', as he suggests, because I am dealing with big industrial towns.

As regards religion, Professor Rubinstein basically repeats his opinion that it was no essential factor for business success. For some unknown reason most Anglicans moved into lucrative businesses, and dissenters preferred industrial pursuits, he tells us. This view is probably just as simplistic as the monocausal recourse to religious dogmas.

Conversion from nonconformism to Anglicanism was a common phenomenon among nineteenth-century business families, much to the alarm of all dissenting communities, as the exaggerated, but very popular saying 'A carriage and pair does not long continue to drive to a Meeting House' illustrates. In my sample 55.9 per cent of those businessmen born before 1815 were and remained nonconformists, whereas in my last cohort (birth after 1860) this figure fell to 30.4 per cent.[7] Although I agree with Rubinstein on the 'affinity of dissent for industrialism', in my sample nonconformist shares of 43.4 per cent in the mercantile plus transport sector and 27.4 per cent in finance are by no means negligible. Among industrialists this rate was 54.3 per cent.

As regards the exclusion of the food-drink-tobacco producers from industry, I do not consider it adequate to hide behind the Standard Industrial Classification, as it was put together for purposes different from the specific questions discussed here.[8] Industry, as I would provisionally define it for our aims, employs machinery or mechanical aids as well as a large manual workforce to transform substances or materials from one form into another. All this applies to the tobacco, food and drink industries, but definitely not to purely commercial or financial enterprises. In fact, precisely these factors caused many people to look down on the 'dirt and squalor' of the factory with a mixture of arrogance and repulsion and to define it as socio-culturally inferior to 'gentlemanly' businesses conducted in seemingly brighter surroundings.

All in all, I do not accept most of Professor Rubinstein's objections. Nevertheless, much of the confusion stems from the fact that we are looking at different things, namely wealth-holders on the one hand and businessmen on the other. Furthermore, the picture becomes blurred by some authors who interpret Professor Rubinstein's research in a simplistic and misleading way. The complex relation between London and provincial businessmen cannot be reduced to a mere question of wealth differences. To arrive at a better understanding of it we need both the continuing extension of Rubinstein's highly instructive probate analyses as well as detailed research into specific business communities.

NOTES

1. Y. Cassis, *Les Banquiers de la City à l'Époque Edouardienne (1890–1914)* (Geneva, 1984), p.238, Table 5.5.
2. H. Berghoff, British Businessmen as Wealth-Holders, 1870–1814: A Closer Look', *Business History*, Vol. 33 (1991), p.225.
3 For a full explanation of my methodology see H. Berghoff, *Englische Unternehmer 1870–1914. Eine Kollektivbiographie führender Wirtschaftsbürger in Birmingham, Bristol und Manchester* (Gottingen, 1991), pp.21–2, 62–8, 294–6.
4. William H. Holland (Lord Rotherham; 1849–1927), owner of one of the largest spinning mills in Manchester and board member of the Fine Cotton Spinners & Doublers Association, subsequently the biggest industrial employer in England, ran into debts as a result of stock-market speculation and left an estate of £25.
5. He will miss, for example, Sir Charles W. Macara (1845–1929), the eminent cotton manufacturer and founding member of the Manchester Cotton Spinners' Association, for two reasons, namely the date of his death and his probate valuation (£15,681). The same applies to John K. Bythell (1840–1916; £18,563), who played a vital part in building up the Manchester Ship Canal Co. For further examples see note 4 or go through any volume of the *Dictionary of Business Biography*
6. In industrial Dortmund the richest businessman in 1913 was Wilhelm Hoesch (16 million marks), whereas his counterpart in Frankfurt/Main, Maximilian B. Freiherr von Goldschmidt-Rothschild, owned more than ten times this amount. H. Berghoff and R. Moller, 'Unternehmer in Deutschland und England 1870–1914. Aspekte eines kollektivbiographischen Vergleichs' (*Historische Zeitschrift*, forthcoming). For the occupational distribution of the richest German businessmen alive in 1912–14 see D.L. Augustine Perez, 'Wealthy Businessmen in Imperial Germany', *Journal of Social History*, Vol.21 (1988), p.304.
7. For numerous examples see T.A.B. Corley, 'How Quakers Coped with Business Success: Quaker Industrialists, 1860–1914', in D.J. Jeremy (ed.)., *Business and Religion in Britain* (Aldershot, 1988), pp.167–8, 180–4.
8. This classification is by no means without alternative. The German *Reichsstatistik* for example grouped these trades together with manufacturing industry.

REVIEW ARTICLE

An Historiographical Assessment of New Zealand Business History

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The business history of New Zealand has yielded a substantial literature: a recent bibliography listed close on 1,000 items.[1] These cover many aspects of the subject, including the important primary sector, most of the manufacturing industries and a range of services, particularly transport and finance. Unfortunately, few of these works can be considered high quality by the standards of modern academic scholarship. Many descend into the well-known pitfalls of writing business history by being uncritical, too personalised, focused on trivial details from individual firms and silent on relevant historical and theoretical debates.[2] There are several notable exceptions, however, to this general trend. The main intentions behind this survey are to discuss the strengths and weaknesses of the major publications in the field, and to indicate lines for future research especially in areas of particular significance to New Zealand.

I

At the general level, there are no Chandlerian style surveys.[3] There are several modern economic histories of New Zealand which discuss the growth of individual industries within the macroeconomic context of the modernisation of New Zealand.[4] The most recent, and best, of these is by Hawke. He provides a broad-based discussion which covers the rise and decline of the extractive industries in the nineteenth century, the expansion of import-substitution manufacturing and the rapid advance of food processing as a result of the introduction of refrigeration. Unfortunately, he has little to say regarding the changing structure and organisation of New Zealand firms apart from citing the growth in average size over the course of the twentieth century and making particular allusion to the dairy companies and the financial sector.

Hawke is also the main source for broad thematic issues which are otherwise poorly covered in the literature.[5] He assesses the importance of

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government's role in the economy by looking at its provision of social overhead capital and technical expertise, its intervention in several industries including mining, its role in the establishment of agricultural marketing boards after 1918 and various aspects of macroeconomic policies.[6] Among other major themes of interest to business historians, Hawke looks at the changing geographical origins of foreign investment and the increasing regional concentration of industry at Auckland since 1945.

Castle's study of New Zealand manufacturing offers a more specific and quantitative analysis of some of the themes referred to by Hawke.[7] He looks at the expansion of New Zealand manufacturing through the later nineteenth century and into the twentieth century, citing the changing relative importance of particular industries. Castle agrees with Hawke that the average unit, while expanding, remained small relative to many other countries and seeks to explain this by the small and fragmented home market, the fact that protectionism has encouraged too much diversification and the reluctance of many firms to go public and therefore risk losing control of the enterprise. The bulk of Castle's work is concerned with the post-war period, where he looks at such issues as industrial location, geographical and industrial concentration. Calculating coefficients of localisation and estimating the percentage of value added attributable to the four largest firms in each industry, Castle finds that both geographical and industrial concentration have remained comparatively low. While Castle offers specification to some of Hawke's observations, his work says little about, and underestimates the importance of, the non-manufacturing sector.

Jones' analysis of the changing structure of New Zealand industry over the last century and a half fills many of the gaps of breadth and longitudinal depth left by Castle, although it provides less quantitative detail.[8] Jones' focus is upon the reasons for the emergence of some larger scale firms in New Zealand in the twentieth century. Adapting Lance Davis' thesis regarding the experience of the United States, Jones argues that New Zealand's basic problem was a chronic shortage of capital which, combined with inefficient capital markets, meant that those firms with favoured access to capital were most likely to grow while others would remain small.[9] The alternative argument, that smallness and fragmentation of the domestic market restricted large-scale growth to certain industries, such as finance and shipping, by itself fails to explain significant differences in firm size within the same industry. A variety of firm sizes within the same industry, though, may be the product of several types of market, such as between coasting and overseas shipping, which necessitate different minimum scales of efficiency. Therefore, both market size and access to capital would appear to be important determinants of unit size and other factors may be revealed by further investigation of directions and motives for expansion.

Each of these three authors draws comparisons with other countries, though none could be thought of as a comparative study. Jones' comparison is with the methodology used to explain the growth of big business in the United States, while Hawke and Castle are both concerned with categorising New Zealand as 'developed' or 'developing' according to its industrial structure. Castle views New Zealand as akin to a developed country: although its exports have always come predominantly from the primary sector, it has a high level of *per capita* income, a significant manufacturing sector, is highly urbanised, and from an early stage agriculture has provided employment for only a minority of the population. Hawke is more circumspect, pointing out that agriculture's share of national income has remained closer to that of a developing country and that at least some of the expanded manufacturing base involves the processing of imported semi-manufactures such as in the car assembly industry.[10] A problem faced by business historians anxious to apply structural models developed overseas is the poor quality and sparseness of empirical evidence in New Zealand. An alternative perspective is offered by Simkin who, rather than trying to categorise New Zealand, draws attention to the country's dependence upon Britain in influencing its own particular pattern of industrial expansion.[11]

Other survey level work has concentrated upon limited periods of time, specific geographical areas or particular groups of industries and firms. The outstanding publication here, and indeed the best piece of business history on New Zealand, is Stone's study of the growth and crisis of the Auckland business community in the later nineteenth century.[12] He explains the industrial expansion of Auckland in the 1860s and 1870s as a result of the land wars, gold, land development in the Waikato, the development of financial institutions and the growth of the local timber and gum industries. He provides a wealth of detail about many Auckland industries and individual firms together with an insight into the 'limited circle' of wealthy merchants who dominated the Auckland commercial scene and were instrumental in the foundation of the Bank of New Zealand. Stone is equally stimulating on the collapse of many firms during the depression of the 1880s and early 1890s which he attributes to innate optimism combined with generous credit facilities. Unfortunately, there are no comparable studies of the business communities of other New Zealand cities. Millar's history of the Wellington Chamber of Commerce is of poor quality, lacking both a critical standpoint and clear explanations of events.[13]

Dowie, B. P. Philpott and Fogelberg, among others, have investigated issues such as capital formation, productivity, structure, ownership and control in New Zealand industry over specific historical periods.[14] Forrest takes a somewhat different approach to his study of diversification and expansion in New Zealand businesses.[15] He restricts himself to no particular period but instead selects eight major New Zealand corporations upon which to focus. However, his conclusions are somewhat self-evident and it is not made clear why particular paths of expansion were pursued.

II

Studies of whole industries are scarcely more apparent than national surveys and are largely restricted to agriculture. H. G. Philpott's 1937 study of the dairy industry is one of the earliest scholarly works on a New Zealand industry, although the rigidly chronological approach of much of the book now appears somewhat outdated.[16] It has, at any rate, been extensively employed by subsequent writers, most notably Evans in his history of agricultural production and marketing.[17] This wide-ranging work looked at many aspects of New Zealand agriculture, particularly the pattern of land settlement and the development of the principal sectors. Crawford's study of Canterbury stations in the second half of the nineteenth century is one of several rather general works on the development of sheep farming.[18] While much of Crawford's work deals with the details of sheep rearing, he also says something of the sheep farmers' relations with stock and station agents and coastal shipping firms.

There is more on agriculture, but the focus becomes narrower, looking especially at the role of particular organisations. Aldridge and Burnard chronicle the history of the National Dairy Association which, from the time of its formation in 1894, was devoted to improving the lot of the dairy farmer in such areas as shipping facilities, rail communications and insurance rates.[19] Other studies look at organisations in which the government had a major hand, including McGillivray's on the New Zealand Dairy Research Institute, Hayward's on the Meat Producers' Board and Greensmith's on the Wool Commission.[20] McGillivray's history of the Dairy Research Institute is the most interesting of these studies of institutions and focuses on a well-documented example of the assistance government provided to industry in the form of technical expertise. Dairying was particularly appropriate for this type of assistance because of the rapid rate of technological change and the small average firm size in the industry.

Beyond agriculture there are very few industry-wide studies. Salmon's history of gold mining in New Zealand traces the development of the industry from the individual prospectors in central Otago in the 1860s to the capital-intensive mining companies of the 1890s.[21] Salmon also draws attention to the importance of the transfer of technology from other gold producing countries and discusses the subsequent fate of many miners driven out by the capital-intensive methods of mining companies. May's study of the west coast gold rushes extends beyond the parochialism of many regional studies and demonstrates a firm grasp of gold mining technology.[22] Parry's study of the Otago School of Mines is more narrowly focused, but indicates its importance as a source of trained workers and new technology from the later nineteenth century when mining was becoming more scientific in nature.[23] Simpson's work on the timber industry concentrates upon the techniques of felling, logging and milling and tells us little of the economics of the industry's development, although Belshaw and Stephens detail the financing of this and several other primary industries.[24] Dentistry is one of the few professions well served by a good history. Graham's history of accounting and Cooke's of the legal profession are somewhat uneven and weak on analysis.[25] Two further contributions look at specific aspects of particular industries rather than offering an overall assessment: Jones and Paul on the growth of industrial regulation in brewing and Hawke and Sheppard on the evolution of trading banks prior to the establishment of the Reserve Bank in 1934.[26]

III

The great bulk of the literature has been written at the level of the individual firm. It is also at this level that most of the shortcomings of New Zealand business history exist: it is their celebratory tone which has flawed most in-house company histories. Many not only lack a critical perspective of their subject but give emphasis to trivial aspects of the firm's development and neglect to incorporate the study into the mainstream of historical debates. Frequently they have been written by retired senior members of the firm who, besides giving undue emphasis to their own role, inflate the difficulties surmounted by the founders and gloss over recent controversies and adversity. Extensive use of extant archives is rare and, lacking an historical training, these authors fail to set the company's experience accurately within the context of the development of the industry or the national economy.

The greatest number and best quality company histories are to be found in the financial sector. There are five which merit particular attention. Butlin's study of the Australia & New Zealand Bank traces the development of the two constituent banks, the Union and the

Australasia, up to the 1951 merger.[27] He examines the deliberations by both banks regarding expansion into New Zealand, particularly the Australasia which did not set up there until 1864, and then traces the development of branch banking. The study is set within the banking industry as a whole, and looks at the competition from rivals such as the Bank of New South Wales and the Bank of New Zealand. Merrett ably continues the story on another 20 years to the foundation of the ANZ Banking Group in 1969 following the merger with the English, Scottish & Australian Bank.[28] He is particularly interesting on the organisational changes resulting from the merger and the response to their declining market position in the 1950s. However, there is some duplication with Butlin on the early years and most of the book is set within the Australian context.

Sinclair and Mandle provide a solution to this problem by looking at the history of the Bank of New South Wales in New Zealand.[29] The BNSW entered New Zealand in 1861 by buying out the Oriental, which provided a solid basis for rapid expansion. Sinclair and Mandle contrast the BNSW's cautious lending policies with the higher risks accepted by the BNZ, the National and the Colonial, a policy which hindered its market share during the expansion of the 1870s but paid off during the economic depression of the 1880s and early 1890s.[30] The BNZ also entered New Zealand banking in 1861 as a result of its formation as the first domestically-owned bank. Chappell's centennial history of the bank, while providing worthwhile detail, remains too descriptive and insufficiently critical.[31] Finally, Hawke's study of the Reserve Bank looks at the background to the establishment of a central banking authority and its subsequent operation.[32] The Reserve Bank Act was largely shaped by the recommendations of the British banking expert Sir Otto Niemeyer, and leads Hawke to conclude that the attempt to establish a Bank of England in New Zealand was misguided. This is largely a policy-oriented study and leaves to one side the organisational structure of the Bank.

Histories of other finance-related institutions also proliferate, although they are generally of poorer quality. Histories of insurance companies have mostly been written by self-styled professional business historians, generally from a background of broadcasting and journalism. Byrne's study of Guardian Royal Exchange in New Zealand and Manning's on State Insurance are little more than simple narratives, but Parry on National Insurance and Vennell on South British Insurance provide worthwhile accounts of the national and international expansion of these companies and the problems they experienced in maintaining their competitive position over the course of a century.[33]

There have been six studies of that quintessential Australasian institution, the stock and station agent.[34] The best of this group is again by Parry. His account of the National Mortgage Association indicates the firm's wide and changing interests and sets it within the national context by indicating its role in financing and advising immigrant smallholders, supporting the development of refrigerated shipping services to Britain and its response to national crises such as the inter-war depression. Its solid corporate foundation in both Britain and New Zealand was generally a source of strength, although Parry also relates several contentious issues between the firm's senior officers in the two countries. More typical of the poor quality of stock and station histories is Irving on Wright Stephenson. Irving, a retired branch manager of the firm, is frequently imprecise in his descriptions and glosses over major events such as the decision to go public in 1906. He discusses economic development in New Zealand, but this is very general, well-rehearsed information and is not effectively linked to the progress of Wright Stephenson. The role of foreign capital in pastoral development has yet to receive the extensive treatment it deserves, although Galt's paper on foreign mortgages is an excellent starting point, together with the significant New Zealand content in Hall's study of the London capital market.[35]

The food processing industries have rightly received significant historical attention, primarily in the form of histories of the larger freezing works.[36] Perriam's history of the Waitaki-Pukeuri freezing works at Oamaru provides interesting detail of post-war diversification policies by a firm in a relatively high-risk industry although it fails to explain why the firm moved into particular areas as and when it did. Perriam also misses the opportunity to say something of the co-operative principle in practice, the freezing works being bought by the newly-formed Waitaki Farmers' Freezing Co. in 1922. Lind's study of the Alliance Freezing Co. goes some way towards filling this omission. Local farmers were resentful of the fact that many were facing bankruptcy in the 1930s while the Southland Frozen Meat Co. was paying dividends as high as 16 per cent. Lind details the farmers' battle to establish their own freezing works, which finally succeeded with the formation of Alliance in 1947. Alliance was not a perfect co-op since it included 'dry' (non-farmer) shareholders, and Lind traces through a series of battles between farmers and non-farmers over the company's structure. Stone uses his paper on the New Zealand Frozen Meat & Storage Co. to investigate the notorious crop of company failures in Auckland in the late 1880s. The company collapsed in 1888 with a total loss of the paid-up capital of £102,000. He refutes the popular belief that company promoters of the time were self-seeking villains and instead suggests that they were overwhelmed by technological and financial problems beyond their experience.

Sulzberger's investigation of William Richmond looks back one process in the production line at a stock dealer, buying from farmers and selling to the freezing companies.[37] As the freezing companies became larger and more powerful and the farmers began to organise themselves, Richmond found himself squeezed between adjoining forces in the production process: the twentieth-century history of the firm reads as a series of defensive battles and alliances. Scott's study of Hellabys looks at a firm further downstream, in business as wholesale and retail butchers.[38] By 1914 it had expanded to own nearly a third of all butcher's shops in Auckland and had vertically integrated backwards to establish a meat processing works. Scott narrates the twentieth-century success story of Hellabys, and notes that by the 1960s it was exporting to at least 60 countries. While little has been written of note on the related topic of land development, Burns on the New Zealand Co. and Palmer on William Soltau Davidson are important exceptions.[39]

Conly has recorded the history of Watties, the success story of the New Zealand fruit and vegetable processing industry.[40] James Wattie began in business in the 1930s, when he persuaded jam companies to accept fruit supplied by him from local windfall fruit rather than import pulp from Australia. Thenceforth, Watties went from success to success, establishing a cannery and diversifying into a wide range of produce. Conly has much of interest to say regarding production technology and sales policies, but neglects other possible reasons for the firm's success, particularly in terms of its organisation, or the competitive structure of the industry.

There are a scattering of case studies in other primary industries including two dealing with fertiliser companies.[41] Williams and MacDonald have produced a lengthy and rather indigestible narrative of the British Phosphate Commissioners and the Christmas Island Commission. Lind's history of the Southland Co-operative Phosphate Co. is another good example of co-operative action by Southland farmers, and again he highlights internal conflict over the rights of dry shareholders. McGeorge's comparative study of gold mining includes a section on the Rimu Dredging Co. of New Zealand, which draws comparisons with an Australian company (Victoria Gold Dredging) and offers some interesting examples of international technology transfer.[42] Like most other histories of New Zealand mining, Dreadon's study of George Bull, a mine operator on the Thames goldfield, is explicitly technological in approach and, indeed, uses Bull's battery as the basic unit of analysis in the book.[43] A superior work is Healy's commissioned history of New Zealand Forest Products. By the nature of the company it overlaps forestry and manufacturing. Though superficially deficient in scholarly apparatus such as footnotes, it is objective and contains much valuable information about the unusual financing of afforestation companies of the 1920s and 1930s. It is also interesting on competition with the other industry leader, Tasman Pulp & Paper, and the growth paths pursued by both firms, and is refreshingly frank on the clash of boardroom personalities which was a feature of the fiercely competitive timber industry environment after 1945.[44]

Company histories in the manufacturing sector include the areas of textiles, paper, iron, engineering and ropemaking. There are good histories of three important textiles manufacturers.[45] The best of these is McLean's lucid account of the three firms that combined to form Alliance Textiles in 1960, and of that company's subsequent history. The dominant theme is the sustained attempt to cope with the capital and market constraints of a small economy. The former was addressed by regular mergers and acquisitions, and the latter by increased export orientation. Less eloquently, Stewart on Mosgiel and Kelly on Ellis identify the problems of continually rising capital requirements as a result of more sophisticated technology and the growth in the size of firms.

Angus has written good histories of the iron manufacturer, Shacklocks, and the papermaker, New Zealand Paper Mills (NZPM).[46] Shacklocks' is a fascinating story of a company whose rapid nineteenth-century expansion was based largely upon the success of its coal range, but after 1918 struggled to cope with the rapid technological change in kitchen appliances to electricity and gas. Angus emphasises that it was not simply the changing technology which presented problems for Shacklocks but rather its inability to recognise changed marketing and servicing requirements. In the 1950s and 1960s the rival manufacturers Fisher & Paykel, whose origins lay in marketing imported products, came to the rescue of Shacklocks through an informal agreement which turned the firm around. Angus provides a broad background to the development of papermaking in the south and draws attention to the incentives offered by both the provincial and central government for the establishment of the industry. The twentieth-century history of NZPM centres around domestic and foreign competition and the search for cost-effective alternative raw materials as the supply of rags and sacking proved insufficient for the expanding company's needs. Lucas's study of Donaghys, a firm of ropemakers, focuses upon a company which had little to fear from competition but, instead, faced a frequently shifting market.[47] The decline of coastal shipping in the twentieth century, and the development of alternatives to string, hampered demand for the company's existing products, but the expansion of agriculture and increased demand for carpets provided alternative opportunities. Donaghys attempted to get ahead of shifting demand by developing and publicising new uses for cordage, but by the 1970s it had decided that diversification was the best policy and moved into food products and the manufacture of textiles and bags. Responsiveness to changing markets is ever-important in the capital goods industries: Vennell's history of the engineering firm, A & G Price, illustrates a company which managed this, changing from flax machines to quartz-crushing plant, to railway locomotives, motor vehicles and pulp and paper plants.[48] Like many other company histories, alas, it is weak on the organisational structure of the firm and even omits discussion of the transition from a private to a public company.

There has been plenty written on the history of New Zealand transport, though much of it would be classified as 'popular' in nature and deals more with the details of services than with the nature of transport firms. The enthusiasm and passion for detail which it reveals betray the antiquarian rather than academic character of much of the work in this field. The best papers on railways deal with political economy, and focus upon the alleged political corruption of the Stout-Vogel ministry in the 1880s, which was widely believed to be doing favours for its more prominent supporters, including several railway promoters.[49] Separate studies of two road haulage firms, the Mount Cook Co. and the Hawke's Bay Motor Co., are both disappointing.[50] Wigley's account of Mount Cook is a self-indulgent exposition of the exploits of himself and his father in the company which they largely owned and controlled. It consists mainly of a series of descriptions and stories of particular journeys. While Anderson's history of Hawke's Bay says something of its development and the change from horse-drawn to motorised travel, it contains many trivial stories.

Studies of shipping companies predominate over other forms of transport. The boom in ocean-going shipping following refrigeration is captured in histories of Union Steam Ship, Shaw Savill Albion and the New Zealand Shipping Co.[51] The latter two are brief narratives with excessive concentration upon the details of individual vessels. McLean's recent study of Union Steam Ship, however, is of a superior genre. It provides a thorough and critical account of New Zealand's largest corporation of the late nineteenth century, indicating the basis of its growth, the policies pursued by management and something of the structure of the firm. The shipping entrepreneur Ferdinand Holm operated a series of single ship companies from New Zealand but the significance of this form of company structure is unfortunately ignored in Kirk's study.[52] With a long coastline and a challenging terrain, coastal shipping has always been important. There are histories of several leading coastal firms including Richardsons, Northern Steamship and Anchor.[53] Kirk's study of Anchor is poorly organised but contains some useful ideas about the firm's vertical integration of iron production, ship building and ship owning. Waters on Richardsons, similar to his study of New Zealand Shipping, over-emphasises the details of individual ships while Furniss on Northern Steamship is highly descriptive of the many different coastal routes covered by the company. Ville's study of the growth of trade and shipping at New Zealand's major ports in the nineteenth century gives a spatial dimension to the industry.[54]

The history of one of Auckland's oldest firms, the wholesaler L. D. Nathan, is recorded by a former executive chairman of the company and member of the Nathan family.[55] Couched largely in personal terms, the book offers a limited explanation of why the firm remained in wholesaling for nearly 140 years, when many others had long since diversified or integrated, and then suddenly changed to retailing in 1978. A more common pattern was forward vertical integration into retailing at an earlier stage, as was the experience of Auckland liquor merchant John Reid, the Milne & Choyce drapery and the Dunedin textile manufacturer Hallensteins.[56] Farmers took a somewhat different route, beginning as a mail order firm before integrating forwards into retail outlets and backwards into factory production of its own goods.[57]

The remainder of the New Zealand economy is covered by only a handful of intelligible company histories. These include two fisheries firms, Sanford and Perano, two construction enterprises, Winstone and Fletcher, and the confectionery manufacturer, Cadbury Fry Hudson.[58] Robinson's history of Fletcher is another example of a highly personalised company history. While this style has often exaggerated the importance of one or several individuals within the firm and glossed over their shortcomings, Stone's two-volume study of John Logan Campbell, one of Auckland's leading merchants in the second half of the nineteenth century, is an outstanding piece of biography.[59] Among the many interesting points that arise are Campbell's willingness to diversify business activities to a remarkable degree in response to the changing economic structure of Auckland and his survival when many similar firms folded during the depression of the 1880s and early 1890s. Among the professions, there are histories of two accounting firms.[60] In spite of their importance as facilitators of business in nineteenth-century New Zealand, good studies of law firms are only just beginning to appear.[61]

IV

While plenty has been written on New Zealand business history, there remain neglected areas and the general standard of work is of a limited quality. On the survey level there is a great need for a general study of New Zealand business history comparable to Chandler to give the discipline direction. However, Chandler drew heavily upon quality work at the level of the industry and the firm and therefore it might be argued that improvements at the micro level are necessary before a good survey can emerge. At the industry level we lack good studies of most sectors outside agriculture, particularly in manufacturing, transport and commercial services. Further studies of business communities to add to Stone's excellent work on Auckland are much needed. Of particular value would be an investigation of the growth of enterprise in Dunedin following the gold rush of the 1860s, tracing this through to its relative decline in the twentieth century. Some studies should move away from the firm or industry as the unit of analysis in order to look at particular themes like technology or the role of government.

There is no reason to suppose that the majority of business histories will not continue to be at the company level: this has been the experience in most other countries. However, the quality of these case studies needs to be improved. The above assessment of company histories drew attention to their uncritical perspective, imprecision, trivial stories, unfamiliarity with relevant historical debates, neglect of archival sources, inflation of certain individuals and neglect of the comparative. The tendency to employ retired senior members of the firm to write the company's history is responsible for many of these defects. So-called 'professional' business historians have generally produced a superior form of history although even many of these writers appear unfamiliar with the latest historiographical developments.

Most company histories have been of large and successful firms and, as such, are atypical. It would be good to see more studies of smaller and unsuccessful firms. This would also help to redress the balance away from a limited number of industries, most notably finance, refrigeration and shipping, and would be particularly relevant for Auckland where the boom/bust cycle has been part of the city's commercial mentality. The post-war period is in need of greater attention, particularly as it witnesses important structural changes, including the metamorphosis of many family firms into private companies and the latter into public ones. Moreover, there is little written of the general shift of head offices to Auckland or the wave of mergers beginning in the late 1960s and accelerating in the 1980s. In recent years business history in the USA and Britain has drawn increasingly upon theoretical developments in other disciplines. In particular, the rapid expansion of industrial organisation theory has given business history a new role in applying and appraising these ideas. Most New Zealand business histories, however, concentrate upon examining firms as part of the environment in which they operate rather than analysing their internal structure in any depth.

Closer investigation of internal organisation could enable a clearer understanding of unique or special aspects of New Zealand's business history, such as the smallness of the average firm, the extensive resort to co-operatives, and the importance of stock and station agents in helping to forge the structure of enterprise in the agricultural sector. It is hoped, therefore, that future business historians of New Zealand will endeavour not only to avoid the pitfalls of the past but also to take up the challenges of the 'new business history'. Finally, a further important feature of the New Zealand experience has been its occupation by the Maoris for nearly a millenium prior to British annexation in 1840. The history of Maori enterprise has been entirely overlooked with no significant publications to date. This is the consequence of Anglo-Saxon prejudice and the oral tradition of Maoridom by which virtually no documentary evidence has survived for early periods. A starting point, at least, might be to investigate Maori entrepreneurship since 1840, for which some primary evidence survives, particularly looking at sectors such as agriculture and coastal shipping in which they are thought to have excelled.[62]

NOTES

The author would like to thank Professor Russell Stone (University of Auckland), Associate-Professor Steve Jones (University of Auckland) and the editors of *Business History* for their helpful comments on this paper and Scott Fargher (University of Auckland) for research assistance.

1. See S. Ville, 'A Select Bibliography of the Business History of New Zealand'. This includes books, articles, pamphlets and graduate theses. The publication outlet is currently under consideration.
2. On the pitfalls of writing business history see D.C. Coleman, 'The Uses and Abuses of Business History', *Business History* Vol.29 (1987); K.A. Tucker, 'Business History: Some Proposals for Aims and Methodology', *Business History*, Vol.14 (1972).
3. A. D. Chandler, *Strategy and Structure* (Cambridge, MA, 1962) and *The Visible Hand* (Cambridge, MA, 1977). On Britain see L. Hannah, *The Rise of the Corporate Economy* (1976). Also, for a comparison of Britain, United States and Germany see A. D. Chandler, *Scale and Scope* (Cambridge, MA, 1990).
4. G. R. Hawke, *The Making of New Zealand* (Cambridge, 1985); G. R. Hawke, 'The Growth of the Economy' in W. H. Oliver and B.R. Williams (eds.), *The Oxford History of New Zealand* (Auckland, 1981); J. B. Condliffe, *New Zealand in the Making* (1936); M.F. Lloyd Prichard, *An Economic History of New Zealand to 1939* (Auckland, 1970). Although not strictly economic history, the ideas of Franklin are a useful supplement to what Hawke has written: S. Harvey Franklin, *Trade, Growth and Anxiety: New Zealand Beyond the Welfare State* (Wellington, 1978); *Idem*, *Cul de Sac: The Question of New Zealand's Future* (Wellington, 1985). There is also relevant material in J. D. Gould, *The Rake's Progress? The New Zealand Economy since 1945* (Auckland, 1982) particularly with respect to the expansion of forestry, changes in transportation and the growth of foreign multinationals in New Zealand.

5. Further information on topics such as technology, labour relations and industry–government relations are mostly to be found within the industry and company histories discussed below.
6. Currently, the Historical Branch of the Department of Internal Affairs is supervising 13 contracts covering a spectrum of government-sponsored historical publications which include a history of the Ministry of Agriculture and Fisheries, 1892–1992, and a history of the Department of Scientific and Industrial Research since 1926. I am grateful to Russell Stone for this information. One already published work of note is R.J. Noonan, *By Design: a Brief History of the Public Works Department of the Ministry of Works, 1870–1970* (Wellington, 1973).
7. L.V. Castle, *A Study of New Zealand Manufacturing* (Wellington, 1976).
8. S.R.H. Jones, 'The Growth of the Corporate Economy in a Long Run Perspective', unpublished paper presented to the New Zealand Association of Economists' annual conference at Auckland in August 1990.
9. L. Davis, 'The Capital Markets and Concentration in the United States and the United Kingdom, a Comparative Study', *Economic History Review*, 2nd series, Vol.19 (1966).
10. This is also the basis of Hawke's criticism of W.G. Hoffman, *The Growth of Industrial Economies* (Manchester, 1958), which is a comparative study offering some brief comments on New Zealand.
11. C.G.F. Simkin, *The Instability of a Dependent Economy* (Oxford, 1951).
12. R.C.J. Stone, *Makers of Fortune* (Auckland, 1973).
13. J.H. Millar, *The Merchants Paved the Way: The First Hundred Years of the Wellington Chamber of Commerce* (Wellington, 1956).
14. J.A. Dowie, 'The Course and Character of Capital Formation in New Zealand, 1871–1900', *New Zealand Economic Papers*, Vol.1 (1966). B.P. Philpott, 'Aspects of Productivity and Economic Growth in New Zealand, 1926–64', Publication 29, Agricultural Economics Research Unit, Lincoln College (1966); G. Fogelberg, 'Ownership and Control in Forty-Three of New Zealand's Largest Companies, 1962 and 1974', *New Zealand Journal of Business*, Vol.2 (1980).
15. K.J. Forrest, 'Diversification and Expansion in Large Diversified New Zealand Companies' (unpublished M.A. thesis, Massey University, 1976).
16. H.G. Philpott, *A History of the New Zealand Dairy Industry, 1840–1935* (Wellington, 1937).
17. B.L. Evans, *A History of Agricultural Production and Marketing in New Zealand* (Palmerston North, 1969). This arose out of his statistical abstract for the Government Printer, *Agricultural and Pastoral Statistics of New Zealand, 1861–1954* (Wellington, 1956).
18. S.S. Crawford, *Sheep and Sheepmen of Canterbury, 1850–1914* (Christchurch, 1949); L.G.D. Acland and W.H. Scotter, *The Early Canterbury Runs* (Christchurch, 1975); J.H. Beattie, *The Southern Runs* (Invercargill, 1979).
19. G.F. Aldridge and C.W. Burnard, *A History of the National Dairy Association, 1894–1984* (Martinborough, 1985).
20. W.A. McGillivray, *New Zealand Dairy Research Institute: A History of the First Fifty Years, 1927–77* (Palmerston North, 1978); D. Hayward, *Golden Jubilee: The Story of the First Fifty Years of the New Zealand Meat Producers' Board, 1922–72* (Wellington, 1972); E.L. Greensmith, *The New Zealand Wool Commission* (Wellington, 1976).
21. J.H.M Salmon, *A History of Goldmining in New Zealand* (Wellington, 1963). Also see A.M. Isdale, *Thames Goldfields Centenary* (Auckland, 1967) and the relevant section of W.R. Morrell, *The Gold Rushes* (London, 1968).
22. P.R. May, *West Coast Gold Rushes* (Christchurch, 1962).
23. G. Parry, *The Otago School of Mines* (Dunedin, 1979).
24. T.E. Simpson, *Kauri to Radiata: Origin and Expansion of the Timber Industry of New Zealand* (Auckland, 1973). H. Belshaw and F B. Stephens, 'The Financing of Afforestation, Flax, Tobacco and Tung Oil Companies', *Auckland University College Bulletin*, Vol.22 (1933). Also see K. Jackson, 'Of Trees, Trade and Clearance. When

Kauri was King', Working Paper 69 (1990) Department of Economics, Auckland University; B. Sinclair, *The West Coast Timber Industry, Vol.1: 1866–1914, Vol.2: 1915–32* (Hokitika, 1984).

25. T.W.H. Brooking, *A History of Dentistry* (Dunedin, 1980); A.W. Graham, *The First Fifty Years, 1909–59* (Wellington, 1960); R. Cooke (ed.), *Portrait of a Profession: The Centennial Book of the New Zealand Law Society* (Wellington, 1969). However, also see R. Stone, 'An Anatomy of the Practice of Law in Nineteenth-Century Auckland', *New Zealand Journal of History*, Vol.22 (1988).
26. S.R.H. Jones and D.R. Paul, 'Concentration and Regulation in the New Zealand Brewing Industry, 1850–1970', *Australian Economic History Review*, forthcoming. Also see C. Bollinger, *Grog's Own Country: The Story of Liquor Licensing in New Zealand* (Auckland, 1959); G.R. Hawke and D.K. Sheppard, 'The Evolution of the New Zealand Trading Banks, mostly until 1934', *Working Papers in Economics*, Vol.2 (1984) Victoria University of Wellington
27. S.J. Butlin, *Australia and New Zealand Bank* (1961).
28. D. Merrett, *ANZ Bank: A History of the Australia and New Zealand Banking Group* (Sydney, 1985).
29. K. Sinclair and W.F. Mandle, *Open Account: A History of the Bank of New South Wales in New Zealand, 1861–1961* (Wellington, 1961).
30. However, studies of Auckland bankruptcy proceedings and foreclosures on mortgages, sources not utilised by Sinclair and Mandle, have led Russell Stone to believe that the performance of the BNSW was not markedly better than the other banks. Correspondence with Stone, 28 Aug. 1991.
31. N.M. Chappell, *New Zealand Banker's Hundred: A History of the Bank of New Zealand, 1861–1961* (Wellington, 1961). N.C. Quigley, *Private Superannuation in the Banking Industry: A Centennial History of the Bank of New Zealand Officers' Provident Association* (Wellington, 1988) is an interesting examination of the oldest private superannuation scheme in New Zealand.
32. G.R. Hawke, *Between Government and Banks: A History of the Reserve Bank of New Zealand* (Wellington, 1973).
33. T.B. Byrne, *A Century in New Zealand. A History of the Guardian Royal Exchange in New Zealand, 1878–1978* (Auckland, 1978); A. Manning, *Cover Story: The History of the State Insurance Office, 1905–80* (Wellington, 1980), G. Parry, *Underwriting Adventure: A Centennial History of the National Insurance Company of New Zealand Limited* (Dunedin, 1973); C.W. Vennell, *Risks and Rewards: A Policy of Enterprise, 1872–1972. A Centennial History of the South British Insurance Company Limited* (Auckland, 1972).
34. G Parry, *NMA: The Story of the First Hundred Years of the National Mortgage Agency Company of New Zealand Ltd, 1864–1964* (Dunedin, 1964); P.G. Stevens, *Pyne, Gould, Guinness Ltd* (Christchurch, 1970); J.C. Irving, *A Century's Challenge: Wright Stephenson and Company Ltd, 1861–1961* (Wellington, 1961); H.C. Harraway, 'John Roberts, Man of Business', (unpublished M.A. thesis, University of Otago, 1967); R. Gore, *Levins* (Wellington, 1956); L. Anderson, *Throughout the East Coast. The Story of Williams and Kettle Ltd* (Hastings, 1974).
35. M. Galt, 'Doing Well for Bella: Foreign Mortgages in the New Zealand Financial System, 1885–1901', *New Zealand Journal of History*, Vol.18 (1984); A.R. Hall, *The London Capital Market and Australia, 1870–1914* (Canberra, 1963).
36. C.A. Lind, *A Cut Above: Early History of the Alliance Freezing Company (Southland) Ltd* (Invercargill, 1985); G.R. MacDonald, *The Canterbury Frozen Meat Company, 1882–1957* (Christchurch, 1957); R.C.J. Stone, 'The New Zealand Frozen Meat and Storage Company', *New Zealand Journal of History*, Vol.5 (1971); T. Perriam, *Where It All Began: A History of the Waitaki-Pukeuri Freezing Works, Oamaru, 1914–89* (Christchurch, 1989); M.E. Cuff, *Totara Estate: Centenary of the Frozen Meat Industry* (Wellington, 1982).
37 J. Sulzberger, *The Richmond Years* (Hastings, 1980). There are also several studies of individual sheep stations. R.M. Burdon, *High Country: the Evolution of a New*

Zealand Sheep Station (Wellington, 1938); A.E. Woodhouse, *Blue Cliffs: The Biography of a South Canterbury Sheep Station, 1856–1970* (Wellington, 1982).

38. D. Scott, *Stock in Trade: Hellaby's First Hundred Years, 1873–1973* (Auckland, 1973). Of an inferior genre is G.W. Stevenson's very brief study, *The House of St George: A Centennial History, 1864–1964* (Dunedin, 1964) which looks at the retail firm of Irvine & Stevenson which started off selling cured meat and jams before diversifying into a much wider range of products.
39. P. Burns, *Fatal Success: A History of the New Zealand Company* (Wellington, 1989); M. Palmer, 'William Soltau Davidson: A Pioneer of New Zealand Estate Management', *New Zealand Journal of History*, Vol.7 (1973).
40. G. Conly, *Wattie's: The First Fifty Years* (Hastings, 1984).
41. M. Williams and B. MacDonald, *The Phosphateers: A History of the British Phosphate Commissioners and the Christmas Island Phosphate Commission* (Melbourne, 1985); C.A. Lind, *Super in the South: The Early History of the Southland Cooperative Phosphate Company Ltd* (Invercargill, 1983).
42. J.H.W. McGeorge, *Dredging for Gold* (Melbourne, 1964).
43. R. Dreadon, *A History of Bull's Battery, Karaka Creek, Thames Goldfields* (Auckland, 1966).
44. B. Healy, *A Hundred Million Trees: The Story of New Zealand Forest Products Ltd* (Auckland, 1982).
45. G.J. McLean, *Spinning Yarns: A Centennial History of Alliance Textiles Ltd and its Predecessors, 1881–1981* (Dunedin, 1981); P.J. Stewart, *Patterns on the Plain: A Centennial History of Mosgiel Woollens Ltd* (Dunedin, 1975); M. Kelly, *Mill in the Valley: A Centennial History of Arthur Ellis and Company Ltd* (Dunedin, 1977).
46. J.H. Angus, *The Ironmasters: The First One Hundred Years of H.E. Shacklock Ltd* (Dunedin, 1973); J.H. Angus, *Papermaking Pioneers: A History of New Zealand Paper Mills Ltd and its Predecessors* (Mataura, 1976).
47. K.G. Lucas, *A New Twist: A Centennial History of Donaghy's Industries Ltd* (Dunedin, 1979).
48. C.W. Vennell, *Men of Metal: The Story of A & G Price Ltd, 1868–1968* (Auckland, 1968).
49. R.C.J. Stone, 'The Thames Valley and Rotorua Railway Company Ltd, 1882–9', *New Zealand Journal of History*, Vol. 8 (1974); G.J. Rosanowski, 'The West Coast Railways and New Zealand Politics, 1878–88', *New Zealand Journal of History*, Vol.4 (1970). The best of the amateur railway histories is R.S. Fletcher, *Single Track: The Construction of the North Island Main Trunk Railway* (Auckland, 1978).
50. H. Wigley, *The Mount Cook Way: The First Fifty Years of the Mount Cook Company* (Auckland, 1979); L. Anderson, *Coaches North: The Story of the Hawke's Bay Motor Company* (Auckland, 1967.)
51. G. McLean, *The Southern Octopus: The Rise of a Shipping Empire* (Wellington, 1990); F.C. Bowen, *The Flag of the Southern Cross: The History of the Shaw, Savill and Albion Company Ltd, 1858–1945* (2 vols., 1939, 1945); S.D. Waters, *Clipper Ship to Motor Liner: The Story of the New Zealand Shipping Company, 1873–1939* (1939).
52. A.A. Kirk, *Fair Winds and Rough Seas: The Story of the Holm Shipping Company* (Wellington, 1975).
53. S.D. Waters, *Richardsons of Napier: A Century of Coastal Shipping, 1859–1959* (Napier, 1959); G.J. McLean, *Richardsons of Napier* (Wellington, 1989); C. Furniss, *Servants of the North* (Wellington, 1977); C.B. Frankham, 'The Founding Years: The Financial History of the Northern Steamship Company Ltd to 1890', (unpublished M. Comm. thesis, University of Auckland, 1977); A.A. Kirk, *Anchor Ships and Anchor Men: The History of the Anchor Shipping and Foundry Company Ltd* (Wellington, 1977).
54. S. Ville, 'The Growth of Trade and Shipping at New Zealand's Major Ports in the Nineteenth Century', *Australian Economic History Review*, forthcoming 1992.
55. L D. Nathan, *As Old As Auckland: The History of L.D. Nathan and Company Ltd* (Auckland, 1984).

56. H.F. Reid, *A Century in Commerce: The Story of John Reid and Company Ltd, 1869–1969* (Auckland, 1969); K.A. Tucker, *Milne and Choyce: A One Hundred Year Business History, 1867–1967* (Auckland, 1968); C. Brash and C.R. Nicolson, *Hallensteins: The First Century, 1873–1973* (Dunedin, 1973).
57. M. Kay, *Inside Story of Farmers* (Auckland, 1954).
58. P. Titchener, *The Story of Sanford: The First One Hundred Years* (Auckland, 1981); D. Grady, *The Perano Whalers of Cook Strait, 1911–64* (Wellington, 1982); F. Simpson, *The First Century: A Centenary Review of Winstone Ltd* (Auckland, 1965); N. Robinson, *James Fletcher: Builder* (Auckland, 1970). On Fletchers also see B. Jesson, *Behind the Mirror Glass* (Auckland, 1987); C.V. Smith, *Sweet Success: One Hundred Years of R. Hudson and Company Ltd and Cadbury Fry Hudson, 1868–1968* (Christchurch, 1968). G. Jones, 'The Chocolate Multinationals: Cadbury, Fry and Rowntree, 1918–39' in G. Jones, *British Multinationals: Origins, Management and Performance* (Aldershot, 1986) pp.109–11 contains a discussion of Cadbury's in inter-war New Zealand. In the same volume see R. Davenport-Hines' account of Glaxo's origins as a New Zealand business: 'Glaxo as a Multinational before 1963'.
59. R.C.J. Stone, *Young Logan Campbell* (Auckland, 1982); R.C.J. Stone, *The Father and his Gift: John Logan Campbell's Later Years* (Auckland, 1987). Also see R. Dalziel, *Julius Vogel, Business Politician* (Auckland, 1986).
60. W.S. Gilkison, *Barr, Burgess and Stewart, 1871–1971* (Dunedin, 1972); F.J. Maclean, *River of Experience: The Story of a New Zealand Accounting Firm* (Dunedin, 1980).
61. Studies of Bell Gully Buddle and Weir, and Russell McVeagh McKenzie Bartlett are scheduled to appear in 1991.
62. A new course in Maori entrepreneurship is about to be introduced at Auckland University which, it is hoped, will encourage research in this area.

BOOK REVIEWS

DAVID J. STARKEY, *British Privateering Enterprise in the Eighteenth Century* (Exeter Maritime Studies, No.4) (Exeter: University of Exeter Press, 1990. Pp.344; illus. £25).

'Maritime warfare has assumed many guises over the centuries' – so begins this important study of privateering; an aspect of sea power once commonplace but now extinct. It would be a pity if the apparently specialist nature of this book leads it to be categorised (and dismissed?) as 'naval' or 'maritime', because David J. Starkey's prime focus is not military, but economic. Whatever its role in maritime conflicts, state-sanctioned commerce-raiding was (like its illegitimate half-brother piracy) always essentially a business activity, undertaken for profit. As Starkey demonstrates, privateering can only be properly understood if seen within the broader context of ports, commerce and the shipping industry. His book provides not only a definitive account of the central subject, but also contributes to our understanding of the eighteenth-century British economy.

The historian of privateering is not hampered by a dearth of evidence. Rather, there is almost a superabundance of material. As a state-sponsored activity, a privateering initiative formally began with the issue of a licence and ended with the assessment of the outcome in the Prize Court, generating considerable documentation in the process. The records of the High Court of Admiralty for the period 1689–1815 include over 23,000 'declarations', providing details of the vessels licensed to raid commerce. Thanks to the initiative of Professor Walter E. Minchinton at the University of Exeter, a computer data base was established some years ago to facilitate the analysis of this material. Starkey has been able to utilise this file to explore not only the ebb, flow and geographical scope of predatory activity over the eighteenth century, but also to establish the varying characteristics of privateering enterprise in terms of regional participation. In a separate individual treatment of the five wars of the period 1702–83, he sets these 'inputs' against the 'outputs' represented by the number of enemy vessels condemned as prizes and assesses the significance of these 'additional forces' to the overall military effort.

Although Starkey is seldom purely descriptive in his approach, the bulk of the book is necessarily devoted to tracing in some detail the characteristics of British privateering in each period of international conflict. Out of these cases emerge some general features, which he then pursues in a effective final section, though this is unnecessarily broken up into very short chapters. Starkey resists any temptation to claim too much for his subject; in his view commerce-raiding neither accelerated nor retarded industrialisation and it had no long-term impact on port development. Nevertheless, Starkey argues, within the local maritime economy the private man-of-war offered an alternative deployment of labour and capital. A port's competitive position might suffer in the short term from the diversion of resources from trade into privateering, but where business was already damaged by war such predatory ventures could have a beneficial counter-cyclical impact. Moreover, resources invested in commissioned fleets of private men-of-war were not insignificant. Nationally, the vessels and goods captured amounted to only a fraction of national income but Starkey produces evidence to

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show that at a local level the rewards for both owners and crews could be considerable, testifying to the 'essential rationality of the commerce-raiding business'. It is a tribute to the strength of the study as a whole that such a conclusion seems beyond contradiction. In short, privateering deserves to be seen as an aspect of eighteenth-century British business history.

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PHILIP S. BAGWELL, *Doncaster, Town of Train Makers, 1853–1990* (Doncaster: Doncaster Books, 1991. Pp. viii + 136; illus.; plans. £14.95).

With the decline of Britain's railways, to some extent possibly reversible and certainly not terminal, railway towns have inevitably suffered. Unlike Swindon, Ashford and Inverurie, Doncaster has survived. Indeed, the National Store, where all BR's spares are kept, is there, together with one of BR's four maintenance works plus wagon construction and repair shops which have been privatised. This volume, produced by a publisher acting for Doncaster Metropolitan Borough Council, on which railway union interests have long been represented, is a sort of thank-offering.

The Council has certainly chosen one of Britain's best qualified and most sympathetic railway historians to write their book, and 72 apt illustrations have been chosen; but the general layout is singularly unimaginative and the allocation of 20 large pages to the references is positively extravagant. There are too many uncorrected printing errors and howlers ('the opening of the London & Birmingham Railway in 1830') have not been spotted.

This is transport, rather than business, history – inevitably perhaps, for the expanding works were part and parcel of the far larger Great Northern Railway, the even bigger LNER and then the huge and unwieldy BR. Professor Bagwell does, however, give some equipment costs and there is much useful information about the labour force, the social conditions, the locomotive engineers and their engines. Yet, on the principle that birth is a rather important part of existence for businesses as well as for human beings, it would be good to know more about why these important railway installations were located for political reasons at Doncaster rather than for economic reasons at Peterborough (equidistant from London, Grimsby on a main branch and Doncaster) where engines and rolling stock would normally arrive at least once a day and could receive attention if necessary without incurring dead miles. Peterborough was recommended by a special committee consisting of the general manager and engineers; yet Edmund Denison, an MP for Yorkshire (West Riding), which included Doncaster, who had become chairman of the Great Northern, managed to persuade the Board to choose Doncaster. This was all the more remarkable as the Board had previously agreed to its expert committee's recommendation and was persuaded to defer implementation of it only by the setting up of a second expert committee. This also recommended Peterborough; but this time the Board, astonishingly, did not accept its verdict. That directors, representing the shareholders and therefore likely to be cost-conscious and receptive to expert advice on how to keep costs low, should have voted against that advice, twice given, is a remarkable state of affairs deserving further historical investigation. The result would have been of great interest to business, if not to transport, historians.

London School of Economics T.C. BARKER

BARBARA TILSON, *Made in Birmingham: Design Industry, 1889–1989* (Studley, Warwickshire: Berwin Books, 1990. Pp. xvv + 304; illus.; maps. £11.95).

Barbara Tilson was more than brave to embark upon producing an edited work on the history of design and industry in Birmingham from the late nineteenth century until the present day. The resulting collection of 21 essays, written by a diverse group of academics and others currently engaged on in-company research or consultancy, can either be read and enjoyed or used as a quick reference book, and is a mixed, but nevertheless interesting bag.

As anticipated, the focus is very much on Birmingham's traditional industries of jewellery making, silversmithing, brass working, motor cycles, motor cars, Lucas Industries and Dunlop, but also examines the emergence of computing firms such as Apricot. The opening pages by Barbara Tilson, 'Ingenuity and Industry', sets the scene for the remainder of the book. Chapters two to five concentrate on arts and architecture in the city. Of particular quality is that by Michael Stratton on 'Architectural Terracotta in Birmingham', which closely links building change to civic developments, especially in the latter decades of the nineteenth century. The emphasis then switches sharply to examining the jewellery trade in chapters five to eight and the basic conclusion that can be drawn in that this area of research is underdeveloped and worthy of a book in itself.

Of special interest are the chapters on the engineering industries; Barbara Smith displays a long distillation of her knowledge of the motor cycle industry which ought to be developed into a major work. Roy Church and Chris Mullen faced the opposite task of producing a credible chapter on car making at Longbridge over the past 80 years when there was so much material available. Nevertheless, a crisp and succinct chapter has emerged. The final chapters, covering Lucas Industries, Dunlop and Cadburys are disappointing by comparison if only because they are outlines, which cry out for further work.

While Barbara Tilson deserves credit for putting this collection together, the overall result is both rewarding and frustrating. The latter, because it indicates just how much Birmingham's economic, social and design history remains under-researched. The door has been opened and it is high time that other scholars followed through for a design acquaintance with the Second City.

Coventry Polytechnic TOM DONNELLY

PIERS BRENDON, *Thomas Cook: 150 years of Popular Tourism* (London: Secker and Warburg, 1991. Pp. 315; illus.; maps. £20).

Despite the fact that tourism is now the largest and fastest growing industry in the world, academics have paid scant attention to it. In particular, the 'history' of tourism has been woefully neglected which is why Piers Brendon's book is a welcome addition to the field. The aim of Brendon's book is to demonstrate how, via two contrasting but extremely dynamic men – Thomas Cook and his son John Cook – mass tourism was developed. In this respect the title of the book is a little misleading. Most of the book concentrates on the development of the Thomas Cook business in the nineteenth century. It is clear that Brendon sees this period as the most interesting and important phase in the firm's history, and in many respects he is right. Brendon eloquently demonstrates how, between 1841, when Thomas Cook organised his first excursion by train from Leicester to a temperance meeting in Loughborough, and 1872, when he organised his first round the world tour, Britain was transformed from a static society to a mobile one. He also shows how Thomas Cook was largely responsible for this transformation.

If Thomas Cook was the innovator, his son John was the one who turned the firm around from a philanthropic concern to an efficient 'global operation' run on industrial principles. Brendon pays a lot of attention to the conflicts that arose between Thomas Cook and his son due to the firm's changing values and how this culminated in Thomas being bought out of the company. I felt throughout the book that Brendon focused on the lives of Thomas and John Cook to the neglect of the development of the firm Cook in the twentieth century. In this sense the book is not really a business history, but more of a biography of the lives of two men.

By concentrating so much on the exploits of Thomas and John Cook, Brendon creates the impression that the spirit of the firm died when John Cook died in 1899. Indeed, throughout the book one gets the impression that Brendon is arguing that if any firm is to be constantly successful it always needs a dynamic leader. However, because Brendon never spells out this argument the reader has to deduce it by reading between the lines. This in a sense is the major weakness of the book. At times the book is far too descriptive and it contains no real central argument and no analysis. This, I think, is due to the fact that it is being targeted at the general public as well as academics.

Despite this, the book is so well written and expertly researched that it does more than enough to retain the interest of the general reader and the specialised academic. Piers Brendon has made an important contribution to our understanding of the history of the increasingly powerful tourist industry. One final point: it is ironic to think that the founder of mass tourism, who was a teetotal Evangelical preacher, was perhaps to blame for the development of the sun, sea, booze and sex package tour.

Lancaster University MARK HILTON

BRYAN BENNETT and ANTHONY HAMILTON, *Edward Arnold: 100 Years of Publishing* (London: Edward Arnold, 1990. Pp.vi + 122; illus. £12.95pb).

This book, as its title suggests, has been written to mark the centenary of the book publishing firm, Edward Arnold. It could not mark the centenary of the firm as an independent business, for, like many other smaller publishing houses, Edward Arnold found it impossible to survive on its own in the 1980s and was bought by Hodder & Stoughton in a friendly takeover in 1987.

Nonetheless, there is an aura of the celebratory volume about this work. Both the authors were directors of Edward Arnold, having joined the firm in the early 1950s. They write as company men, so that many of their predecessors, colleagues and employees receive their honorary mention by name. They also write as publishers, for whom the mere titles of books can have an evocative resonance which can escape the uninitiated. In these characteristics, their tone and appearance is typical of many histories of publishing houses produced by members of the firms. But their book is not just another eulogistic in-house history, that bane of the business historian, and it does hold interest for the scholar as well as the publishing trade.

The authors have treated their subject in a strictly chronological fashion: every chapter, apart from the first which is entitled 'The Beginning', is headed simply by a pair of dates. Inevitably, this makes following through individual themes – such as the important list of medical and scientific publications, or the mixed fortunes of the company's overseas agencies and branches – difficult to do. The fact that the index is of names only, and not of subjects, is no help. There have been few dramatic developments to help give a chronological narrative shape.

To be fair to Bennett and Hamilton, though, any other approach, particularly to the period before they joined the firm, might have been difficult to adopt because of the apparently patchy survival of source material. No list of sources is given, but for much of the book the major documentary evidence seems to be the publishers' own lists and snippets of reviews which sound as if they have been taken from advertising material. Some correspondence of Edward Arnold himself is quoted, and some authors' letters seem to have survived, but little in the way of accounts or sales records which could give an idea of the business fortunes of the firm.

For the business historian, the chief interest of the book lies in the account of the period since the authors joined the firm themselves in the early 1950s, particularly after they became directors, Anthony Hamilton in 1958 and Bryan Bennett in 1962. (The partnership had been changed into a private limited company in 1953.) Little precise financial information is given, but some indicators are provided, and the increasing difficulties of keeping a medium-sized independent publishing house afloat as a private company in the 1970s and 1980s, are not obscured. The importance of export markets is also made clear.

While this may not be a company history as a business historian would write it, it is probably one which a business historian, faced with the dearth of records, might have found hard to produce. In this case, that the book has been written by men who are insiders is an advantage, rather than a drawback. A professional historian should have been able to organise the material more clearly, but might have found it hard to convey, as Bennett and Hamilton do, the sense of mounting and multiplying difficulties which British publishers have faced in recent decades.

Business History Unit, London School of Economics CHRISTINE SHAW

EDGAR JONES, *A History of GKN Volume 2: The Growth of a Business, 1918–1945* (London: Macmillan, 1990. Pp.xxxvii + 389. £35).

This is the second of a projected three-volume history of GKN and represents the final contribution of Edgar Jones as chronicler of the company's fortunes. Lavishly produced and copiously illustrated, Volume 2 covers the period from the end of the First World War to 1945, an appropriate termination point in view of the election of a Labour Government committed to nationalising a considerable portion of GKN's industrial assets. The story that emerges, against the backcloth of the inter-war depression, is of a firm which succeeded in diversifying its interests in coal, heavy steel products, woodscrews, and nuts and bolts, to encompass sheet steel and castings for the expanding automotive and electrical industries, as well as extending profitable manufacturing operations overseas, most notably in Australia. Although the heavy steel and coal interests of GKN experienced the full impact of recession in the later 1920s and 1930s, the average profitability of the combine was sustained by the buoyancy of the woodscrew market and the relative prosperity of its two major acquisitions in the post-1918 period, the firms of John Lysaght and Joseph Sankey, both of them suppliers to the motor vehicle and electrical trades. Average after-tax profits in the 1920s were in the region of £800,000 per annum and, in the following decade, £500,000. Even at the depth of the depression in 1932–33 substantial six-figure profits were earned. In the absence of diversification, therefore, and with its fortunes heavily dependent upon heavy steel and coal, GKN would undoubtedly have joined the ranks of ailing firms in the staple industry sector.

In Volume 1 of his history of GKN Dr Jones produced a fascinating account of the core enterprises of the GKN combine, providing the reader with an informed commentary on technological developments and succinct appraisals of managerial competence through successive generations. Particularly impressive was his ability to relate the history of the business both to the wider economic environment and the most recent interpretations of British economic development. Elements of these qualities are evident in Volume 2, but overall the exposition is dominated by narrative, focusing on the detail of GKN's firm acquisitions and the changing personnel of the boardroom. A reference to the work of A.D. Chandler creeps into the concluding pages, but the reader will search in vain for a considered appraisal of GKN's managerial strategy in the emergent era of corporate enterprise. As Dr Jones points out, GKN was an outstanding example of the kind of holding company which had come to dominate large tracts of British industry by the end of the inter-war period, but nowhere does he provide a satisfactory explanation of GKN's growth via firm acquisitions. Indeed, with one or two notable exceptions, the impression is created of an *ad hoc*, if not haphazard, sequence of company purchases which owed little to strategic perspectives. As Jones comments, even a loose holding-company structure can give access to pooled overheads, risk spreading, and co-ordinated pricing, sales and investment policies. Whether GKN availed itself of these possibilities is uncertain. What seems likely is that in the absence of effective head office functions internal accounting procedures were rudimentary, as was awareness of marketing techniques and the importance of research and development. If a final volume of the GKN story is ever published it is to be hoped that it sheds some light on these matters as a prelude to analysing the development of a multidivisional structure in the 1960s.

University of Lancaster M.W. KIRBY

GEOFFREY JONES and MAURICE KIRBY (eds.), *Competitiveness and the State: Government and Business in Twentieth-century Britain* (Manchester & New York: Manchester University Press, 1991. Pp.x + 203. £35).

This book is the outcome of an enterprising conference sponsored by business historians at the Universities of Lancaster and Reading. Although its perspectives are shaped by the revival of interest in national competitiveness and the role of the state (especially in industrial policy), its basic concern is with the perennial topics of the relative decline of the British economy and the sins of omission and commission of British governments.

The general theme is introduced in a suitably balanced way by Jones and Kirby, who rightly warn us against too hysterical a view of Britain's performance while acknowledging the problems of explaining its undoubted inadequacies. There follow nine case studies of particular aspects or episodes (Kirby and Mary Rose on the promise and collapse of reconstruction policy in 1914–19, Jim Tomlinson on labour and productivity in 1945–51, Martin Chick on nationalisation in the same period, Helen Mercer on the Monopolies and Restrictive Practices Commission in 1949–56, and Wyn Grant on manufacturing industry policy generally) or of particular sectors (Geoffrey Jones on banking, Oliver Westall on insurance, T.A.B. Corley on oil companies, and Jonathan Brown on agriculture) – but, disappointingly, none on a specific manufacturing industry.

There are, of course, substantial theoretical and historical problems with both the concept of 'competitiveness' and the relationship between competition and national economic efficiency. Thus, competitiveness (the performance of an economy, an industry or a firm) is not the same as competition (a particular structure of markets); nor is it always clear whether it is can be best approached through a study of costs, exchange rates, productivity, or non-price characteristics. Moreover, twentieth-century experience does not provide unambiguous guidelines as to the organisational bases of industrial and national efficiency: are they to be found in vigorous, even ruthless, competition, or in market stability, cooperation and large-scale oligopolistic enterprise?

These issues do come to the surface in some of the essays – particularly in the introductory chapter, the chapters on the 1945–51 Labour Government, and, somewhat more incisively, in those on banking and insurance. But they are not assessed with any rigour, since the prime focus of the collection is the nature and *proximate* effects of state intervention. Little space is devoted to questions of how public policy might have improved economic performance or the broader implications of the policies that were adopted.

This is partly because most of the essays are concerned with one of two broad themes: first, policy initiatives that were contemplated but never came to fruition (reconstruction during the latter stages of the First World War, the encouragement of productivity in the years after 1945) or proved innocuous (monopolies and restrictive practices); second, regulatory interventions that did not aim at expansion or efficiency, but rather sought stability and strategic security (banking, insurance, oil, agriculture).

It follows that the collection is diffident in its generalisations about competitiveness. It is much more useful as a source for business and economic historians concerned with what governments actually did than as an analysis of the dynamics of political economy. Indeed, even when the essays address this issue directly (as in the chapters on reconstruction, the Labour Administration of 1945–51, monopolies, or industrial policy generally), it is not clear what their authors conceive an appropriate set of growth- and competitiveness-inducing policies might have been.

This is hardly surprising: economic and business historians are (or should) not be in the business of formulating counterfactual growth models. In this context, their role is to suggest the imperfections of the real world. And in this respect *Competitiveness and the State* provides a useful but depressing reinforcement of the now conventional view: British industrial policy has been characterised by a wasteful and frustrating incoherence and a too-respectful attitude to disruptive trade unions and slothful management; insofar as it has had consistent objectives, they were so bound up with the desire for stability and political tranquility as (at best) to hinder change and adaptation, and (at worst) to encourage collusion, protect inefficiency and exploit consumers.

Yet it is not at all clear what follows from such diagnoses. Thus, it is significant that, in their penetrating essays on banking and insurance, Jones and Westall confess that, with all the collusive imperfections of the regulation or self-regulation of such financial services, it is doubtful if deregulation and greater competition would (or does) lead to significant social gains. More generally, in the rare instances when an author turns to what *might* be done by government to improve British productivity (as Grant does in his review of Britain's 'sporadic and incoherent' industrial policy (p.116), the talk focuses on those newly fashionable, but still vague, prescriptions: the encouragement of research, education and training – tasks which 'cannot be left to market forces' (p.116).

This is, then, a helpful if unsurprising collection. It reminds us (albeit obliquely) of the nature of Britain's disease – although a more searching discussion of a putative disease that has lasted 100 years, and left the nation stronger and richer than it has ever been, would have been welcome. In any event, it is obvious that the problems and disappointments identified – the imperfections of the labour market and trade-union legislation, the caution and oligopolistic behaviour of businessmen, the 'capture' of regulatory institutions by those who should have been regulated, the desire for a quiet government life, the feeble response to pressure groups, the priority given to ensuring continuity of food and energy supplies – are essentially *political* in origin and character. The combination of an inadequate corporatism and short-term individualism cannot be dissolved by economics alone.

St Catharine's College, Cambridge BARRY SUPPLE

RICHARD WHIPP, *Patterns of Labour, Work and Social Change in the Pottery Industry* (London Routledge & Kegan Paul; 1990. Pp. xii.+ 248. £30.00).

It is almost two decades since the debate on the 'labour process' provoked by Braverman's writings started in earnest. Early Marxist studies were grounded on the assumption that explorations of the workplace would explain the dynamics of capitalist production and domination. Since that time an enormous amount of research has been dedicated to the analysis and reconstruction of workplace relations, and a new sub-history of 'work' established. In response to this research there has, in recent years, been greater realism about the possibilities of workplace analysis and the extent to which studies of industrial labour can explain the direction of class politics. Few historians believe that the structure of production itself can explain attitudes and behaviour, as further research uncovers the diversity of cultural attitudes and gender relations amongst wage earners. Some writers have turned back to the established institutions of capital and labour, rejecting the assumption that class interests exist outside of the associations which represent working class members. The great value of Richard Whipp's book is his sensitivity to these recent developments in scholarship and his attempt to apply their insights to his pioneering research on pottery workers. For Whipp is concerned not only with the division of labour on the pot bank but also the complex social relations which extended beyond the workplace to the society of the Potteries themselves. *Patterns of Labour* strives to ensure that the meanings placed on work by the workers themselves are recognised, rather than the theoretical constructs which have been produced by academics in their own intellectual labour process. The book illuminates the cultural filters through which workers saw their working lives and the world around them, and the author is less preoccupied with the exclusive domain (and mystique) of the skilled worker than with showing how the province of skill formed part of the larger terrain of workplace relations. The chapters guide the reader through the technical complexities of pottery production and into the communities of the workers themselves, thereby uncovering the 'social bases of collective organisation' on which social and political action was grounded. Women form a central part of the story which culminates in the rise of a new (if fractured) labour politics in the area.

Although impressive in its scope and ambition, there are flaws in the account offered by Whipp. Most obviously, the author is forced to compress a great mass of argument and material in a little over 200 brief pages and as a result the prose takes on the appearance of summaries of points rather than explorations of the issues involved. This may explain why the author occasionally leaves the reader guessing as to how he extracted his conclusion from the mass of primary and secondary works cited. In the discussion of working-class consciousness Whipp endorses many of the views found in the writings of Williams and Thompson, but, by emphasising the degree of choice and free association which pottery families enjoyed, Whipp understates the material constraints that can be found in everyday life and the extent to which the workers' horizons were fixed by forces over which they had limited control. To recognise the capacity of people to draw on their cultural resources to find meanings in their working life should not obscure the existence of an armoury of fatalism which workers fashioned to protect themselves against the experience of defeat. Such fatalism existed in the Potteries as well as the Methodist chapels of Edward Thompson's England, and may help to explain why working people did not succeed in transforming the bleak landscape of the clay district.

At the centre of the book lies the question of working-class identity and the way in which the workplace shaped the consciousness of class in the Potteries. Whipp appears to endorse Reid's view of sectional identities and 'spontaneous divisions' among industrial workers. At other points he stresses that capital – labour relations are neither essentially conflictual or reciprocal. Even if we accept that 'spontaneous' attitudes and relationships can exist in any meaningful sense, there remains the problem of the different layers of identity which workers have and the most significant influences over their actions. At different points Whipp suggests that workers' attitudes are clearly structured by the physical conditions of their industry, and that pottery (or automobile?) workers in two countries may have more in common than different kinds of labour in the same country. Elsewhere he notes the fundamental importance of geographical place in working-class attachments and the local patriotism within the Potteries. This suggests that even workers who were saturated by the customs of a particular craft might identify much more strongly with a country or locality than an occupation in reaching a decision to fight a war or join a revolution. As Whipp shows, the outcome of actions depend on relations with others (including the powerful) rather than custom alone. The heretical might even suggest that many labourers did not identify with any specific occupation and moved from job to job without the baggage of occupational loyalties that have dominated the history of work.

Perhaps the most interesting contribution which this book makes is to demonstrate the basic continuity of life and work in the Potteries during the past century. Historians are accustomed to search for social change as an indicator of passing time and of conflict as the means of understanding social relations. Richard Whipp shows that another British industry has been characterised by a relatively slow pace of technical and organisational change in the twentieth century and that its workers have contributed to the manufacture of that stability as well as the production of everyday objects which we all recognise.

University of Exeter JOSEPH MELLING

CHRIS SMITH, JOHN CHILD and MICHAEL ROWLINSON, *Reshaping Work: The Cadbury Experience* (Cambridge: Cambridge University Press, 1990. Pp. xvi + 394. £45).

This is an excellent book and should be read by all business historians as an exemplar of thoughtful, analytic investigation into recent business change. It is an in-depth study of a vast investment programme undertaken by Cadburys at Bournville, its premier confectionery plant, in the mid-1970s and early 1980s, and the plethora of associated changes in work organisation and industrial relations which accompanied it. Cadburys is to be congratulated for allowing access to its records and personnel, and for encouraging the process to be analysed and written up, even when its managment disagreed with the analysis. It is a pity that more British firms are not as enlightened.

Between 1974 and 1982 Cadbury spent over £55 million on capital equipment for their Bournville site, £40 million of it in the last three years. This resulted in a reduction in the number of products from 63 to 31, of plants from 149 to 116 and of employees from nearly 9,000 to 6,000, and the rationalisation continued for the next four years at an unabated rate. In order to reap the maximum financial return from this huge investment, Cadburys had to bring about radical changes in work practice which included moving to three-shift, seven-day operation and flexible working. This in turn required an assault upon the shop stewards, the emasculation of the long-established Works Council and a shift of power away from specialist professionals, such as engineers, accountants, and marketeers, to production line management. In many ways what has traditionally been seen as Cadbury's philosophy – care, consultation and welfarism – was thrown out in this period when management re-asserted its right to control the organisation of work and ended or evaded cherished practices such as job security, seniority as a criteron for moving to new plants, consultation, craft solidarity, and shop steward privileges. The resulting strikes only delayed implementation.

The book sets Cadbury-Schweppes in its sectoral context, discussing the oligopolistic nature of the world confectionery industry and classifying it as a mass-production luxury sector which lacks a craftsman tradition and hence has always been open to mechanisation and deskilling. There is also a brief historical introduction based largely on Rowlinson's thesis and a discussion of the immediate background to the investment programme – the merger with Schweppes in 1969, the lack-lustre related diversification drive under Lord Watkinson, and the singularly unsuccessful new product launches in the early 1970s when 56 new brands were launched, of which 32 had been discontinued within two years and 51 within a decade. The authors also analyse the role of individuals in bringing about change, especially those who were external to the Bournville philosophy and ethos.

There are one or two complaints, mostly of a minor presentational nature. The tables have not been given the attention they deserve. One on page 76 is untitled, unnumbered and never referred to in the text; table 3.1 has misprints which make a nonsense of some columns, and some transparently wrong or misplaced figures, and does not show what is claimed for it in the text; table 4.6 is confusingly laid out. Occasionally tenses slip or are put in an unnecessary conditional, words are omitted – sometimes reversing the intended meaning of the sentence – and we get two variations of the name of a machinery supplier on contiguous pages. More importantly, given that part of the pressure for change is attributed to the growing internationalisation of confectionery brands, a little more could be said on how this was evinced in Cadburys. Also the study ends rather abruptly around 1982–83, even though there are hints in the book that the investment programme and its longer term effects on rationalisation of brands, plant, and personnel continued to be felt into the later 1980s. There is also little discussion of the methodology. Part of the evidence is interviews of personnel several years after events. This technique suffers from failing memory and, more worrying, *post hoc* rationalisation where in fact chaos and serendipity reigned. To the extent that contemporaneous documents support recollection this is no problem, but where records are lacking the natural tendency to impose pattern and causality may over-order reality.

However, this book is a significant and worthwhile contribution to a range of current issues: a microstudy of de-industrialisation with large-scale labour shedding; an explicit and concerted policy to break the power of the trade unions and especially shop stewards; a parallel drive to compel professionals to abandon separate status and become integrated in production; an example of corporate strategy where marketing lost its ascendancy to production. It is well written, clear, and, thankfully, relatively jargon-free. Future generations of business historians will wish for more like it.

Ealing College London JOHN ARMSTRONG

MAXINE BERG (ed.), *Markets and Manufacture in Early Industrial Europe* (London: Routledge, 1991. Pp. xiv + 332, £40.00).

This loosely-knit collection of innovative work that began life in a series of workshops at the University of Warwick is broadly based on an analysis of industrial organisation before the factory which emphasises the market rather than production. Within a framework informed by the proto-industrial model and highlighting the relationship between commerce and industry, the volume focuses on the market in its various guises; especially as a locus of conflict and as a source of change. Berg's trawl through recent literature on pre-industrial organisation reveals a growing concern with social institutions but an inadequate appreciation of the significance of demand. The contributions to this volume, which seeks to remedy this lack, are categorised somewhat uncomfortably and probably unnecessarily; and while they do not fit easily together, individually they have value. With uncharacteristic brevity and clarity, Pollard emphasises the crucial regional feature of early European industrial development and attempts to explain the differential experience of proto-industrial regions as the context changed to mass production. This brilliant piece promises to advance an important area of debate. The contribution of state intervention and protectionism to Spanish regional industrial expansion and especially to the rise of Barcelona is the subject of a soundly based piece by Thomson, and is complemented by Torras's analysis of the marketing strategy of Catalan textile firms. The success of this region is explained, largely on the basis of a single family firm, in terms of the creation of industrial and personal marketing networks that stimulated a growth of sales even in ill-protected markets where foreign merchants were firmly established.

While the role of fashion and novelty in the expansion of the textile industry has long been acknowledged, the mercantile function of determining product diversification of manufacturers has been rarely described. Kusamitsu's analysis of the emergence of new marketing principles in the Yorkshire cloth industry suggests a distinctive role for merchants in the nineteenth century as agents, sensitive to the dynamism of taste and influential in the activities of producers. The variety of demand is a theme further developed in Collins' highly persuasive piece that emphasises the relationship between industrial change and market structures. Outwork, which operated in symbiosis with the factory, provided the necessary flexibility for the Ulster linen industry to meet the fluctuating demand for its products.

The neglected area of urban production within proto-industry is tackled both by Hohenberg, who emphasises the vitality of the European town in pre-factory production and by Berg, whose less clearly structured piece examines the relationship between urbanisation and innovation and reveals the highly creative nature of eighteenth-century manufacture in Birmingham.

Gender rears its ugly head in two further contributions. Gullickson refutes Medick's appealing idea that women's position in the household was strengthened during the proto-industrial period and concludes, on the basis of her Pays de Caux research, that despite some economic gains, women remained inferior workers *vis-à-vis* their husbands. Simonton's analysis of the English apprentice system reveals the institutionalisation of women's secondary position in the labour market, as girls were confined to lower status and overstocked occupations; a careful and interesting piece, but not pathbreaking. Commerce and custom form the final category. Hudson's computer-aided study concludes that the nature of proto-industry and of industrial transformation should be understood in terms of landholding patterns and customary practices. The market as a source of conflict within the putting-out system is the forms of Magnusson's impressively interdisciplinary pieces. He analyses social drinking (in Eskilsturra, Sweden) as a feature of artisanal culture important for self-identification; and reveals the tavern as the arena for the sale of unsettled goods and for the acquisition of social contacts. Contemporary middle-class condemnation of working-class drinking was much more an objection to the social conflicts that found expression in the tavern.

While these contributions are not perfectly integrated and the promise of Europe in the title is only partially delivered, this does not detract from the high standard achieved by the individual authors and the overall quality of the volume. It forms a welcome contribution to knowledge on the organisation of pre-factory business.

University of Leeds KATRINA HONEYMAN

REINER FLIK, *Die Textilindustrie in Calw und Heidenheim, 1750–1850. Eine regional vergleichende Untersuchung zur geschichte der Fruehindustrialisierung und der Industriepolitik in Wuerttemberg. Zeitschrift fuer Unternehmensgeschichte, Beiheft 57.* (Stuttgart: Franz Steiner Verlag, 1990. Pp. vi + 393; illus. DM88).

In the mid-eighteenth century the town and district of Calw in western Wuerttemberg was a flourishing centre of the manufacture of worsted cloth, whilst Heidenheim, on the eastern side of same principality, was becoming a centre of linen manufacture. But whereas Heidenheim transformed itself into a growing centre of cotton manufacture in the early nineteenth century, Calw quietly stagnated in the manufacture of hosiery and blankets. Flik sets himself the task of explaining this contrast through a collective and exhaustive business history of the main firms of each district, largely based on detailed examination of the relevant public archives. Guild history was not a material part of the story. In the mid-eighteenth century the firms he describes were largely privileged purchasers and finishers of the cloth of domestic weavers, or sometimes of higher quality imported cloth. By the mid-nineteenth century the successors of these firms, or the new firms which had replaced them, were factory-based.

These business histories tend to emphasise the importance of politics to the firms' success or failure: privilege, taxes and tariffs, and war. But the analytical conclusion stresses the hard, anonymous forces of the market. Transport advantages explain why Heidenheim prospered more than Calw. For Wuerttemberg as a whole, low money wages (contrary to the opinion of other historians of the region) constituted its comparative advantage against other districts of Germany, favoured, for example, by more plentiful raw materials. Low money wages, in turn, partly reflected the cheap food prices made possible by the efficiency of the food-surplus districts of Wuerttemberg; and in part the immobility which the wide distribution of land-holding induced in the industrial population. In large measure, then, Flik's study follows the 'proto-industrialisation' paradigm. But whilst Flik relates low wages to partible inheritance, he refuses to view the latter as an exogenous cause of the former: it was only as rural industry was taking hold in Heidenheim that the system of impartibility, which it formerly shared with surrounding districts, gave way to partibility.

Flik does not view 'entrepreneurial culture' or 'pietism' as independent explanations of the differing fortunes of his two districts, because he views these 'factors' as locationally mobile: Schumpeterian entrepreneurs will (and did) seek out favourable locations. Nevertheless he recognises that 'low wages' are only one part of an explanation of locational advantage which, for completeness, must also include 'work effort', and skill. To explain these requires consideration of the 'culture of work'. This he regards as an *agendum* of future research.

Whilst Flik places his study in the abstract context of the 'proto-industrialisation' debate, he does not place it in the concrete context of other, parallel, regional economic histories, like that of Saxony. This narrows the study's usefulness to the general reader.

University of Manchester T. BALDERSTON

FRANÇOIS CROUZET, *Britain Ascendant: Comparative Studies in Franco-British Economic History* (Cambridge: Cambridge University Press, 1991. pp.514. £50).

Professor Crouzet's reputation as an economic historian ranks highly in Britain and several of the papers included in this volume have long been classics. This applies notably to his comparative analysis of economic growth in France and Britain (Chapter 1), his study of capital formation in Britain during the Industrial Revolution (Chapter 5) and the lengthy article on British exports during the Industrial Revolution (Chapter 6). That is not to say that the other chapters are any the less interesting. They were first brought together and published in French under the somewhat different and provocative title (for his countrymen) *De la supériorité de l'Angleterre sur la France*. This may have something to do with the complaints he voices in the introduction alleging that 'for two generations, left-wingers have imposed in France a kind of intellectual terrorism (which, moreover, since 1981, has had the full force of the State apparatus behind it)'.

What characterises all Professor Crouzet's work is the thoroughness with which he tackles problems and his scrupulous use of evidence. While critical of those who neglect quantitative data, he is neither a quantative economic historian (of the French school) nor a new economic historian. His style is distinctively traditional, empirical one could perhaps say in an English tradition (for contrast one can point to the recent study of French economic history by Maurice Lévy-Leboyer and François Bourguignon).

In the introduction Crouzet explains how he was drawn towards British history and found a niche for himself in comparative analyses of Britain and continental countries, especially France, in the period of Britain's predominance. His work is thus almost entirely anchored in the eighteenth and early nineteenth century; there is no chapter on Britain's 'decline' though it would be useful to have his views on the matter.

What he calls the love–hate relationship is a theme stressed in the introduction and returned to in the final chapter, 'Problems of Communication between Britain and France in the Nineteenth and Twentieth Centuries'. This is a vast field and Crouzet has scoured an enormous literature to illustrate his points, concluding in a final postscript that 'indifference has become the dominant feeling'. As he shows, there have been waves of anti-French or pro-French feeling in England and similar waves for or against England in France, while particular groups or classes have shown similar variations. Crouzet says little about the religious factor; he is concerned with what French and English men thought about each other (differences in the position of women are not considered); and he does not mention that special rapport which seems to exist between the Scotch and the French. Perhaps excessively uncritical of Britain, Crouzet is pessimistic about France's future; 'in the next century', he writes, 'she may be only a geographical expression a territory mainly inhabited by people of Arabic and African origin: *Finis Galliae*'. Unfortunately, there are politicians who make a profession out of evoking such fears.

Instead of re-writing studies originally published some years ago, Crouzet makes additions in the shape of footnotes and appendices to take account of the findings of recent research. However, in the case of the seminal article comparing England and France in the eighteenth century first published in 1966, the volume of work referring to it has been so great that it receives a new chapter, itself more than twice as long as the original. In the end Crouzet comes down on the side of the 'revisionists', but with a dash of scepticism. In short, his mature view opposes sharp contrasts between the economic development of England and France; while discerning some features in the former more condusive to economic growth in the eighteenth century, he suggests that, but for the adverse effects of the Revolution and the Napoleonic Wars France was not so far behind as to have been unable to launch an Industrial Revolution, but he sees no force there which was tending 'to effect a thorough-going transformation of economic structures' and remains agnostic about what set it going in England. He comes back to the traditional view of the importance of the cotton industry. The breaking down of the bottlenecks in production by the inventions in spinning opened the way for profit-making on a new scale, followed by an advance on a broad front and thus an acceleration of all-round growth. There was both balanced and unbalanced growth: 'the cumulative and self-sustaining process of innovations, which can be compared to a chain-reaction was unleashed'.

For those who think that the work of the late Fernand Braudel has been overrated, Crouzet's review (Chapter 3) of that part of his book which compared the economies of England and France will be welcome. Braudel was a master of sweeping and unsupported statements, as Crouzet is able to show, at times clinging to out-dated conceptions (such as J.U. Neff's first Industrial Revolution) or making obvious mistakes (there were no such things as English 'customs papers' – customs returns were made on large ledgers). In short, Crouzet is rather exasperated by 'a meandering and discursive exposition, which altogether does not present any systematic or coherent interpretation of the Industrial Revolution' and ascribes England's superiority over France to the former being more 'nervous' (whatever that might mean). He rightly criticises Braudel for the habit of 'personalising entities', a snare, it may be said, for many indulging in comparative history.

In the introduction Crouzet had already committed himself to the view that 'a British Renaissance has taken place in the 1980s'. In the two concluding postscripts he turns again to current politics, speaking of 'the weakening and decay of France under Mitterand' and 'an incompetent, inefficient, corrupt, boastful government in Paris, with an elderly *roué* at its head'. Economic comparisons may not be so favourable to Britain. Crouzet also takes to task the the TV serial (and West End play) 'Allo, Allo', perhaps without having seen it. Whether or not it is in bad taste (or an example of British humour which the French do not understand), its lampooning of the French was far exceeded by its ridiculing of the Germans (and Italians), with the British themselves emerging as comic muddlers. Indeed, was it not satisfying the British stereotypes of foreigners?

This volume is handsomely produced, pleasingly translated and essential reading for the student of economic history. As with so many academic books these days it is priced well beyond the means of the average scholar, who will have to resort to a library, itself probably short of funds. It is to be hoped, therefore, that Cambridge University Press will be able to publish a paperback edition.

Gravesend TOM KEMP

PAT HUDSON and W.R. LEE (eds.), *Women's Work and the Family Economy in Historical Perspective* (Manchester: Manchester University Press, 1990. Pp.299. £35).

The editors of this book are to be congratulated for their courage and success in bringing together a volume which explores the historical importance of women's work over several centuries and countries. *Women's Work and the Family Economy* is notable not only for the analyses of women's work inside and outside the home but also for underlining the need to integrate women's history into the major debates of economic and social history and for an interdisciplinary approach which embraces ideology, demography, and social and political identity.

In an extremely lucid introduction, Hudson and Lee provide a thoughtful overview of the key themes in the literature on women's work: the role of ideology, the impact of law and of state policy, continuity and change in the sexual division of labour, changes in technology and the organisation of work and the importance of the family economy. This section of the book makes a valuable contribution to the literature in its wide-ranging and stimulating review of the historiography of women's work and the family economy in the primary sector, the urban trades, proto-industrialisation and industrial capitalism. It is the breadth of coverage – over time and over geographical area – which marks out this work. Lee and Hudson take on and succeed in illuminating the major issues in women's history from medieval times to the present throughout the European continent and demonstrate how a male perspective has led to distorted interpretations of the labour market.

The book is divided into four main sections dealing in turn with agriculture and proto-industry, women's work and the family economy, factory work and urban employment, and unemployment and casual labour. The European perspective is provided by four outstanding chapters by Ogilvie, Meyering, Blom and McDermid on women's work and their contribution to the family income in Wurttemberg, France, Norway and Russia respectively.

The role of ideology and the impact of state policy as major constraints on women's employment, recurrent themes throughout this volume, are ably analysed by Catherine Hall in her chapter on middle-class women in Victorian England and by Clare Evans in a particularly stimulating chapter on the active construction of masculinity and femininity in Victorian England. Evans' analyses of the debates on emigration, public works schemes and the establishment of educational training schools during the Lancashire cotton famine shows how men were perceived to be producers of labour power and of value production, whilst women were defined as potential married women who had only a transitory work commitment. Women were reproducers rather than producers of labour power.

Whilst all chapters stress the importance of women's work inside and outside the home to the family income and its impact of on fertility and mortality, Lee's analysis of the demographic implications of gender-specific work patterns in Germany in the nineteenth century and Pat Ayres' chapter on the hidden economy of dockland families in Liverpool in the 1930s are particularly impressive. Ayres assesses the crucial importance to many working-class families of married women's survival strategies which ranged from casual labour outside the home and home working to reciprocity, exchange, and mutual aid through women's networks of kin and community relationships. As such Ayres underlines the key role women played in keeping hearth and home together and demonstrates how neo-classical approaches to the standard of living which concentrate exclusively on the wage rates of adult males can be very misleading. Formal, measurable income and expenditure comprised but one often small part of the working-class budget: to overlook the non-monetary, impersonal, informal and indeed sometimes illegal elements is to court over-simplification of working-class lives – a moral which surely applies beyond the narrow confines of Liverpool dockland families of the 1930s.

Women's Work and the Family Economy makes an important contribution to economic and social history. Hudson and Lee have realized their stated intention of integrating women's history into our understanding of the historical past and demonstrating the errors of adopting a male perspective. Business historians should all find this book well worth reading.

University of Leeds SUE BOWDEN

JEAN-PIERRE BORGIS, *Charles Morel: Constructeur Dauphinois sous la Troisième République* (Grenoble: Presses Universitaires de Grenoble, 1990. Pp.351. No price).

In July 1978, the archives of Charles Morel et cie, a small engineering firm founded in the late nineteenth century in the Isère department of south-west France, were saved from destruction by Jean-Pierre Borgis. The result was in 1987 a doctorate and three years later this book. Discovering and saving so full an archive for so small a firm – it employed at most 81 people – is rare and of great potential value, and it should obviously be brought to the notice of a wider public. The problem is how best to do it. The solution adopted by Borgis is to squeeze the source until every proverbial pip squeaks. Thus every bit of information relating to the firm and its owner is extracted and presented, but it is not put in at any sort of wider context.

The source is unusually rich. We can discover what the firm produced and its quantities. It specialised in making machinery for crushing, grinding and sieving rocks for making cement, although there was a brief and unsuccessful foray into bicycle and motor car production. (From a photograph reproduced in the book the latter was more like a double moped.) We are given information on both the extent and geographic location of the firm's markets. Increasingly this was in France, as tariffs rose abroad and the French industry sheltered behind protective barriers. The company's accounts give us a reliable indication of the firm's profits and wage bills and how these varied over time. We know the precise layout of the firm's factory at Domène, and the composition of its labour force. Most of the men and boys – there do not appear to have been any women, but there was plenty of juvenile labour – were recruited locally, although there were a few Swiss and Italians. Towards this labour force Morel acted by his own lights, as a benevolent paternalist, providing soft drinks to counteract drinking at work – often a problem in French factories – paying for workers' funerals or giving the odd 20 francs or so to any employee whose wife had a baby. (Morel was against birth control and even more hostile to bachelors.) Long-serving employees were given pensions. But this benevolence did not prevent a high rate of labour turnover: 43 per cent of the workers left within a year of joining the firm. Neither did it prevent strikes in 1907 nor socialism creeping into the factory.

A clear picture of Charles Morel himself emerges from the book. Highly cantankerous, early in his career he quarrelled with most of his business associates and was not happy until he set up on his own. He was a prodigious worker and filer of patents, although these largely rang the changes on existing techniques rather than providing any radical alternative to them. His business and financial affairs were conducted with the prudence that we would expect of the owner of a French family firm – in particular with a high liquidity preference and a reluctance to use outside finance. Morel prospered as the firm grew. By his death in 1914 he was very nearly a franc millionaire (admittedly only about £40,000). Moving up the social scale, he bought a landed estate and his second marriage was to a rich widow. After a spell as the local mayor he became a senator. In politics he was highly conservative, even clerical, although like all true sons of the Third Republic he felt obliged to give himself a progressive label.

We know all the above about the firm and its owner and much more besides. Borgis is to be congratulated on his meticulous attention to detail. But what the book generally lacks is any sort of broader context. Virtually nothing is said about development in the cement-making machinery outside France. Now ignorance concerning this subject might be pardonable for the general reader. But a specialist book like this ought to have shown an awareness of A.J. Francis' work on the nineteenth-century British cement industry, although admittedly this is a hard read. More significant omissions are any references to the literature on the French family firm or entrepreneurship such as that of Landes and Fohlen. Indeed, no books in languages other than French are cited at all. This is a pity, because if the book had been shorter and the context broader it would have been much better.

The Queen's University of Belfast DAVID JOHNSON

MICHAEL DUMOULIN, *Les relations économiques italo-belges, 1861–1914* (Bruxelles: Palais des Académies, 1990. Pp.372. Fb 372).

This book looks into two areas: trade between Italy and Belgium and the flow of Belgian investment into the Italian industrial and service sector.

Reciprocal trade was not enormously important as a percentage of each country's total trade. Nevertheless it reveals an interesting pattern. Italian exports to Belgium comprised hemp, foodstuffs – especially fruit, olive oil and vegetables – and non-ferrous metals. Most of Sardinia's mines belonged to Belgian concerns such as the leading zinc manufacturer, Vieille-Montagne. Belgian exports fell under the category of machines and railway stock, iron and steel, and armaments. It was, therefore, very much a relationship between a developed and an underdeveloped economy and, although Dumoulin does not expand on this, it appears to have been encouraged by Italian policies designed to secure outlets for agricultural goods by granting significant reductions of the general tariff for particular categories of investment goods. Moreover, there were significant changes in the quality of Italian imports: in the course of the 1870s the Belgian company Cockerill sold a great number of locomotives, but in the course of the 1880s it switched to exporting engines to Italian firms, whereas after 1900 it was more a question of sending spare parts.

Public transport was by far the largest outlet for Belgian capital in Italy, accounting for as much as 90 per cent of total direct investment in 1885. Having failed to gain any significant share of the railway bonanza of the 1860s, due to the dominance of the Rothschilds and the Péreires, Belgian companies directed their efforts into building gas and water networks and then moved on to secure the orders for the new urban and metropolitan tramway lines. First to make the transition in 1875 was the Oppenheim-Errera group, connected to the Banque de Bruxelles, which started operating steam tramway services in Turin and Naples. By 1885 Belgian companies owned 866 km. of lines throughout the whole peninsula. They proved themselves especially adept at dealing with local governments, finding them more inclined towards foreign tenders than the central administration. Dumoulin points to two factors underlying this massive wave of investment: on the one side there was the search for outlets on the part of the export-oriented Belgian metallurgical firms and on the other the lure offered by the promising state of Italy's finances in the early 1880s. During the following financial crisis of 1888–95, moreover, Belgian companies were able to consolidate their holdings further often by electrifying the lines.

Dumoulin goes to great length in outlining the main Belgian corporate networks. In the end it appears that just a small number of leading institutions, such as the Societé Générale, the Banque de Bruxelles, the Crédit Liègeois and a few other, mainly family owned, investment trusts, pulled all the strings. Very often, especially due to the liberal company legislation prevailing in Belgium, they were joined by French and, particularly in the electrical business, by German groups. Attempts at forming joint ventures with Italian companies were, on the other hand, sporadic, and this, Dumoulin argues, was to prove a serious liability when the Italians began to display a more nationalistic posture after 1900.

While German and French investments have previously received some attention, particularly in the works of Hertner and Gille, the role of Belgian capital is largely unknown and therefore Dumoulin's well-researched contribution is particularly welcome. Much attention is given to the management of the companies involved and, whenever his sources allow him to do so, Dumoulin takes a closer look at their business strategies. A useful addition to the book is the attached microfiched calendar, in which about 150 companies are listed and described.

This is a chiefly a history of one particular field of activity of Belgian business and it has much less to say about broader issues such as the role of Belgian and foreign capital in Italian economic development.

London School of Economics RUGGERO RANIERI

ULRICH HERBERT, *A History of Foreign Labor in Germany, 1880–1980* (Ann Arbor: University of Michigan Press, 1990. Pp.xvi + 310; illus. £29.95).

In 1975, as a school-leaver, I spent six months working for the German chemical giant BASF in its huge plant at Ludwigshafen/Rhine. Living in pre-fab barracks behind the factory gates, I shared a small, sparsely furnished, ant-infested room with a middle-aged Pole, who, when not working 12-hour shifts, spent his time between the bottle and the brothel. For anyone who has experienced at first hand the tedium, drabness and alienation of *Gastarbeiter* life in Germany, Herbert's important and highly topical book makes poignant reading. For those seeking insights into the relationship between foreign labour and the development of advanced economies, and into the complex problem of the integration of immigrants into Western societies, this book, originally published in German in 1986, provides an excellent starting point.

Herbert demonstrates the great importance, at times, of foreign labour to the German economy; 1.3 million imported seasonal workers before 1914 functioned to protect east Elbian agriculture from direct wage competition with industry, while helping to erode traditional aspects of the estate system. Recurrent labour shortages during the Second World War were at least partially met by the forced deployment of nearly eight million foreigners. This enabled the Nazis to continue the war – Herbert estimates by two years – beyond the point that Germany's own labour resources would have permitted, while maintaining a high level of provisions for the native population and avoiding the mass employment of German women in industry. *Gastarbeiter* in the 1960s helped fill the gap left by the end of the influx of East Germans and by increased labour demand from industry. Throughout the century, the utilisation of foreign labour helped absorb the effects of economic fluctuations, while improving the status and occupational mobility of German workers.

The official policy from the Kaiserreich to the 1980s is revealed as a series of inconsistent, stop-gap measures, determined sometimes by politics or ideology, but more often by short-term economic expediency. German governments, both before 1914 and in the late 1930s, faced with massive labour shortages, but fearful of being swamped by migrants (*Ueberfremdung*), attempted via registration and work permits to maintain the temporary character of foreigner employment. Aspects of this 'prophylactic policy' re-emerged in the 1950s as Italian labourers were recruited for German agriculture. Even during the Second World War, as the SS acquired total control over forced labour, there was a constant tension between economic and political-ideological priorities. What, however, distinguished this foreign labour system from all others in German history was that racism was its 'very lodestar, its unwavering fixed point'. In terms of Nazi ideology the mass destruction of foreign workers – 'annihilation by labour' in Herbert's words – was a rationally founded objective, which achieved its terrible apotheosis in the last months of the war.

Inevitably the question of historical continuity gnaws at the core of such a survey. Precisely here Herbert proves most astute. While he takes issue with Bade's view of the Nazi deployment of foreign labour as a distinct and exceptional situation, Herbert also rejects the notion of a 'single line' running from the use of migrant labour in the Kaiserreich to the recruitment of *Gastarbeiter* in the 1950s. In fact the opposition of continuity and break is a 'false dichotomy'. All foreign labour systems were products of 'temporary, short-term measures', yet there were historical continuities, particularly in forms of recruitment and the regulation of working and living conditions. The seasonal labour system was the 'original matrix' out of which the forced labour system of both World Wars evolved, although the latter was not the 'sole feasible continuation', but rather one among several possible solutions to Germany's wartime labour problems.

The situation has changed fundamentally over the last 20 years. The 'foreigner problem' is no longer about temporary workers, but about the permanent settlement of four million foreigners, a reality which, Herbert argues, official policy has failed to comprehend. A long-term strategy for integration is required which takes into account the different experiences of various immigrant groups within Germany. Here Herbert draws some hope from the US experience of ghettoisation as a necessary transitional stage towards assimilation. In a postscript to this edition, however, he warns of the dangers accompanying the opening of Eastern Europe and the rise of the radical right. Historical experience only too clearly shows that in times of rapid social and economic change, xenophobic and nationalistic tendencies can emerge with frightening swiftness.

University of Hull ROBIN PEARSON

ROSEMARY E. OMMER, *From Outpost to Outport: A Structural Analysis of the Jersey-Gaspé Cod Fishery, 1767–1886* (Montreal, Kingston and London: McGill-Queen's University Press, 1991. Pp.xvi + 245; illus.; maps. $C39.95).

The 'staple theory' is by far the most important twentieth-century Canadian contribution to the theory of economic growth. This study of the Canadian Atlantic cod fishery is part of the contemporary evolution of the staple theory in Canada. Ommer analyses the colonial staple trade between the Gaspé region of eastern British North America (Gaspé is situated on the Gulf of St Lawrence) and the British Channel Island of Jersey which began in 1767. Gaspé was the outpost and Jersey was the metropole. In 1886, Jersey ended its trade with Gaspé, which was then reduced to Canadian outport status.

In its heyday the North Atlantic cod fishery was an extremely prosperous industry and it was the foundation of Jersey's commercial wealth. Ommer provides an abundance of detail from the business records of the trading house of Charles Robin & Co. (CRC) of Jersey and Paspébiac, the Jersey Chamber of Commerce and the Jersey customs records. Indeed, some of the examples of original documents, and also the tables based on them, would have been better placed in an appendix rather than in the text, where they sometimes undermine its flow.

This study provides both a business history of Jersey's external economic sector and a history of the economic development of the Gaspé region. Ommer shows that the cod fishery developed into a functional three-pointed trading system: production in Gaspé, management in Jersey, and markets in the Mediterranean, the West Indies, and Brazil. She argues that while the cod fishery enriched Jersey's businessmen, it contributed very little towards the economic development of the Gaspé region. Certainly, Jersey trading houses, in particular CRC, were to a large degree responsible. CRC developed a stranglehold over the fishing communities of the Gaspé region through the company's truck system. There would appear to be some similarities with the sharecropping system of the post-Civil War Southern United States. It was very difficult under such circumstances for the fishermen to generate the capital necessary for the economic development of the Gaspé region and its hinterland. However, Ommer also argues that CRC offered through the truck system something the itinerant trader could not – that is to say a reliable source of supplies, irrespective of good or bad fishing seasons. Such stability, Ommer believes, was vitally important to the Gaspé fishermen.

Ommer's most important contribution to the evolution of the staple theory is her identification of the concept of the 'stolen linkage'. The Gaspé fish trade shows how much stolen linkage potential can rebound to the benefit of the metropole and the deprivation of the colony. The Gaspé region failed to develop local sources of supply of even basic necessities such as potatoes, barrels and fishermen's sweaters. These continued to be imported from Jersey. Ommer argues that the historical yardstick so often used to measure the extent of the contemporary failure in the Atlantic Canadian inshore fishing economy is unrealistic and based on an exaggerated tradition of past success.

This monograph represents a significant contribution to the business history of Jersey and the Gaspé region of Canada and also to the evolution of the staple theory. However, this will probably limit its appeal to the non-specialist.

Wolverhampton Polytechnic RICHARD A. HAWKINS

ERIC W. SAGER and GERALD E. PANTING, *Maritime Capital: The Shipping Industry in Atlantic Canada, 1820–1914* (Montreal: McGill-Queens, 1990. Pp.xviii + 289; illus.; maps. £37.95).

The latest product of the Atlantic Canada Shipping Project (ACSP) analyses the rise and decline of the shipping industry in the course of the nineteenth century. Sager and Panting build upon and revise previous work on the subject, including their own. They make intelligent use of material from the data bases of the ACSP to indicate developments in shipowning and shipbuilding at the major ports, much of which is attractively and clearly reproduced in the many maps, tables, and graphs. Their study is set within the wider context of Canadian and British colonial economic development and makes explicit use of neo-classical and Marxist economic theory. As such it is of a superior genre to most conventional maritime history, which remains highly empirical and narrowly based.

The basis of Sager and Panting's argument is that neo-classical analyses, based upon comparative costs, are, by themselves, insufficient explanation of the rise and decline of the 'Maritimes'. It is necessary, additionally, to take account of state policy and the social relations of production. Thus, the benefits of the Navigation Laws in the early years and the absence of a coherent policy of state assistance at the end of the nineteenth century are significant considerations. However, the Navigation Laws had been of benefit to British North America well before the rapid growth of British demand for Canadian timber and ships encouraged the expansion of the shipping industry at the turn of the nineteenth century. The potency of state policy in the industry's decline may likewise have been over-emphasised and their brief discussion of the impact of government aid to shipping in other countries runs contrary to the general pessimism of prevailing wisdom. The issue of social relations of production is based upon a neo-Marxist assessment of the transition from the mercantile to the industrial stage of capitalism. Atlantic Canada failed to complete this transition which inhibited the development of a modern capital-intensive shipping industry based upon steam and steel. A variety of reasons are cited for this 'disarticulated development', such as a slow growth in demand, low wages, and an abundance of small traders and landholders. Probably the most important of their explanations concerns the drift to landward investments by the merchant shipowners who dominated Canadian shipping as returns in these industries were surpassed by other investments. This appears to take us back to a neo-classical interpretation of comparative advantage as steel steamers superseded wooden sailing vessels. Sager and Panting's rejection of this approach, however, is based upon an insufficiently close link between falling freight rates and Canadian shipping investment and the fact that world sailing tonnage continued to grow. However, it might equally be noted that steam arrived early in the transatlantic trades and, as the authors note elsewhere, many shipowners continued to operate through depressed periods.

One of the most significant points made by the book, and of particular interest to business historians, is the continued importance of vertical integration (merchant shipowner) in the Canadian shipping industry at a time of increased occupational specialisation in the merchant fleets of other countries. This forms part of the general interpretation of the continued predominance of merchant capitalism in Atlantic Canada. Sager and Panting offer several specific explanations of vertical integration, particularly as a means of minimising transport costs for high bulk goods and for better control of output and distribution. Given their intelligent application of neo-classical and Marxist economic theory, it is somewhat disappointing that they do not also include an application of the theories of vertical integration expounded by institutional economists such as Williamson and Casson. Williamson's concept of 'asset specificity', in particular, may help to explain the predominance of this structure in the North Atlantic timber trade. Vertical integration also complicates their attempts to measure the returns to shipowning, as does their apparent failure to make allowance for fixed shore assets and working capital.

This important book is dedicated to David Alexander, who died a decade ago, which is a measure of the enduring nature of both his memory and the importance of his contribution to Canadian maritime history.

Australian National University SIMON P VILLE

LARRY SCHWEIKART (ed.) *Encyclopedia of American Business History and Biography: Banking and Finance to 1913* (New York: Clark, Layman, 1990. Pp.xxx + 520; illus. £45.00).

This is the fifth volume to appear in this 'encyclopaedia'. (Earlier volumes dealt with topics such as railroads, automobiles, and iron and steel. A subsequent volume will take the story of banking through the twentieth century.) There are 520 pages and a liberal scattering of pictures of people, buildings, and documents. An excellent introductory chapter is not only a succinct history of money, banking, and finance in the USA up to 1913, but is also a guide to the rest of the volume. There is a useful but not faultless index.

There are 114 entries, making the average entry just over four pages long. However, there is a considerable range, with the longest being 24 pages and the shortest one-eighth of a page. Of the 114 entries, 75 are on individuals, 23 on institutions, and the remaining 16 on topics. The first group is dominated by bankers; the second by banks; and the third is made up of items such as wildcat banking. The entries on individuals are by far the longest. Several of these are more than 14 pages. J.P. Morgan, probably justifiably, merits the longest entry at 24 pages. Savings and Loan institutions are given only 100 *words*. Even the Real Bills doctrine does not merit more than a third of a page. In brief, this is much closer to a dictionary of business biography (in banking) than an encyclopaedia.

Most of the contributions are signed. Where they are not they appear to be by the editor, though there are also several signed pieces by the editor. Some authors have contributed several entries. In total there are 42 contributors, but nine of these are responsible for more than half the volume.

The earliest reference is to 1730, and Alexander Hamilton, born in 1755 (though not in America) is not far behind. Quite sensibly there are people and institutions who survived beyond 1913 but who are included. Some individuals lived on into the 1930s and 1940s, though clearly made their main contribution before to 1914. But the great bulk of the material, as might be expected, is concentrated in the years 1850–1914, when the United States was undergoing its most dramatic period of development.

Most of what I looked for in this volume I found and apart from the brief treatment of institutions it was well covered. But there were some odd omissions: nothing on 'colonial money'; no entry on what has become an important topic in finance – 'the market for corporate control'; nothing specifically on financial capitalism. Some of this might be explained by the bias towards individuals as against topics. Yet there is no entry for the Bank of the United States, and there is no mention of it in the index. But the editor's introduction does treat the subject at some length and there is further coverage in two entries dealing with eminent managers of the bank: Cheves and Biddle. Unfortunately users unfamiliar with these names would be unable to find their way to information easily. In other words, some cross-referencing would have improved the volume's usefulness.

Does the business historian need to have this volume on his bookshelf? I would say that the answer to that is that the specialised business historian does need to have it and most business historians would want to have it on their shelves. It is a good work of reference, but very much better on individuals than on institutions either narrowly or broadly defined. And while there are excellent contributions on some subjects, such as Timberlake on National Banking and Currency Acts or Rockoff on the Suffolk System, there could have been more of them.

City University Business School FORREST CAPIE

GEORGE S MAY (ed.), *Encyclopedia of American Business History and Biography: The Automobile Industry, 1896–1920* (Brucolli Clark Layman and Facts on File, 1990. Pp.xxiv + 485; illus.; £45).

The automobile industry continues to be a focal point in the history of industrialisation. In America it expanded from very small beginnings around the turn of the century to become, by the inter-war years, the country's largest manufacturing sector. In doing so it became a leader in rationalised production methods, charting new territory in mass, standardised production and creating and supplying burgeoning domestic and international markets.

Between 1896 and 1920 America came to dominate the world automobile industry. By the end of the period the industry was already well on the way to consolidation into the 'big three' – Ford, General Motors and Chrysler – and the foundations of multinational operations were being laid. The face of urban America was being reshaped by the automobile during this period. New, individual, mobility patterns were accompanied by the restructuring of towns and cities, new work and leisure patterns, and, arguably, the beginnings of one of the most powerful consumer cultures of modern society with aesthetics and status indication competing with utility for the customer's dollar.

In the workplace the industry was the site of new managerial organisation and work relationships. Scientific management was taken up and refined to a point where in flow-line production the aim was to limit, as far as possible, the discretion of individual workers. The automobile assembly worker, tightening nuts on the wheel of endlessly passing automobile wheel hubs, although always only a minority in the business of making cars, remains the dominant image of alienated work. Gramsci noted the totality of dominance over the worker which such a system engendered as 'Fordism' entered the analytical language to represent a new phase of industrial and social organisation.

There are a few well-trodden paths in the history of this industry, but it still remains a rich ground for business historians, social historians, sociologists, geographers, design historians, or those with a general interest in the history of American industry or the automobile as a cultural artefact. The *Encyclopedia of American Business History and Biography: The Automobile Industry, 1896–1920* is a very useful supporting text, providing an entry into the subject and aiming to appeal to generalists or specialists. The book is part of a series which includes other volumes on the railroads, iron and steel and banking and finance. Subjects covered in *The Automobile Industry* are wide-ranging, amounting to a treasury of information. For example, the opening list of entries include A.C. Spark Plug, Advertising, American Motor League, Edgar and Elmer Apperson, Auburn Automobile Company, Automobile Shows and Axles. Later entries include Marketing, Mass Production and Steam Cars. It must be noted however that the bulk of the text is allocated to the study of specific individuals and corporations. Wider contextual issues such as road development, the gasoline industry or legislative developments are not explicity referenced. Entries vary in length, reflecting the detectable bias towards a history of the individual. Brakes for example, perhaps a subject of great excitement for historians of technology, is covered in half a page. Henry Ford gets 20, two of which are taken up with details of his death.

The book is well laid out and indexed. There is a good introduction, which could arguably be expanded and linked to the specific articles in the text, although in a work of this kind this is no easy task. The quality and usefulness of the entries varies somewhat. Some are limited to a useful precis of one ot two published sources on a topic. For example, Electric Automobiles are covered in a two-page section with a single reference to Ray's *American Automobile: The First Forty Years* for further study. Historians seeking to understand the dynamics of technological change through a balanced study of successful and unsuccessful products will be disappointed here. (Although, to be fair, there are some interesting features on other 'failures' – the Cartercar and the unsuccessful friction drive for example.) Other entries give a much fuller survey and contain valuable insights. The contributions by George S. May, Charles K. Hyde, and Alec Kirby are typical of the longer entries. They contain a brief opening chronology and are supported by references to the key texts and, important for the scholar, details of archival collections. A very full and impressive account is developed of the early corporate pioneers, including the Dodge brothers, William Durant, Henry Ford, Charles Nash, Ransome Olds and others and the way they grappled with technology and capital formation, marketed their cars in showman style, merged and broke up, and succeeded and failed by their own efforts or with a hand from Wall Street. A very sensible decision has been made to override the periodisation of the title in many cases in order to give more complete information. A companion volume covers the period 1920–80, and subjects are allocated between the two, dependent on their importance to the period. Major subjects which overlap are included in both books.

Recent trends in historiography have called for the history of those 'hidden' from previous accounts – workers and consumers and their ethnic and cultural patterns for example. There have also been calls for a wider account of technological change to encompass the 'social shaping' of products and production processes. In light of this there are bound to criticisms of a work of this type, which is cast in a more traditional mould. An aura of heroic individualism pervades many of the entries and there is a general uncritical assumption of the inevitable triumph and efficacy of American corporate capitalism. Too much criticism along these lines would be unfair to a work of this type, however, whose organising principles address differing issues. It is a book which will serve the purpose of the historian interested in clarifying a specific development or detailing the history of individuals and corporations, and provides useful guides to further study. It is more than that however. It is a very readable and entertaining account of this central industry in a crucial period of development in the modern world, very successfully combining academic study with lively and absorbing narrative.

University of Manchester RICHARD COOPEY

JUDITH A ADAMS, *The American Amusement Park Industry* (Boston: Twayne Publishers, 1991. Pp.xvi + 225; illus. $27.95 cloth, $11.95 paper).

In the comedy film *That Touch of Mink* Cary Grant suggests to his heroine that her Mid-West home town must have been pretty staid. To this Doris Day roguishly replies that he 'doesn't know the girls of Sandusky'. For Sandusky Ohio (I learn) has since the 1890s been one of the great centres of wild commercial fun, famous for its ferocious roller coasters, the legendary Cyclone and the roaring Magnum XL 200 'scream machine', one of the biggest roller skating rinks in the USA, venue of Glenn Miller and the big bands. The urbane, patronising Mr Grant had better beware of a high-spirited girl raised in Sandusky.

This really fascinating book traces the development of amusement parks in the USA from the 1890s to the present. The American story begins with the Chicago Columbian Exposition of 1893 whose White City site had an entertainment area called the Midway Plaisance. Above all it had G. W. G. Ferris's 264 foot high Ferris wheel, which Judith Adams regards as the first mechanical device to capture the imagination of a nation and display the use of grand technology purely for fun. It was immediately replicated in Blackpool (near the new Tower) and at the Vienna Prater (rendezvous of 'Harry Lime'). Coney Island developed in the 1890s with a variety of enclosed amusement parks thriving on a young New York population with sharply rising wages and diminishing hours of work. Following the Chicago and New York examples, over 1,000 amusement parks mushroomed in the USA by 1919.

The inter-war years saw a setback. The automobile brought wider independent travel and the cinema offered competitive leisure experiences. The Depression itself reduced disposable income for minor luxuries. The parks tried to respond with even more fearsome roller coasters, or gimmicks like the appalling dance marathons trading on the despair of the impoverished. Nevertheless the parks declined to about 300 by 1935.

The parks revived strongly but in a much more ambitious form in the 1950s, with Disneyland opening at Anaheim California in 1955. Judith Adams makes clear how Walt Disney's entrepreneurial vision owed much to the tradition her book recounts. The Chicago Midway's service management of sewage and garbage, G. C. Tilyou's psychological insights at Coney Island, the parks at Kansas City where Walt lived in 1910–17 all influenced the Disneyland concept. Following Disneyland, two dozen major theme parks opened in the 1970s, often run by hotel, media or brewery groups. Then, after Disney's death in 1966, the Walt Disney World Resort opened in Florida in 1971 and EPCOT (his view of the future) in 1982.

That the product is 'amusement' should not mislead us into underestimating the importance of this industry nor its seriousness. By 1988 US amusement parks were a $4 billion a year industry; $900 million was invested in EPCOT alone, while Walt Disney World attracts 25 million visitors a year. Moreover many of the parks have a mind-forming purpose well beyond fun. Tilyou at Coney Island hoped to assimilate immigrants to the culture of the machine and break down inhibitions with devices to disarray clothing and jostle bodies. The Marriott parks, calculatedly alternating experiences of stress and risk with achievement and reward, sought to inculcate an 'entrepreneurial consciousness'. Above all the Disney ethos conveys optimism, the belief in progress through technology, free enterprise and the corporate culture.

This is one of the most interesting academic books I have had the pleasure of reading. In its own terms it kept me gripped, if not gasping, right to the end of its highly stimulating ride.

University of East Anglia MICHAEL SANDERSON

ROGER M. OLIEN and DIANA D. OLIEN, *Easy Money: Oil Promoters and Investors in the Jazz Age* (Chapel Hill, NC: University of North Carolina Press, 1991. Pp.xi + 216; illus. $32.95, $13.15 paper).

In the long span of American history, the decade of the 1920s stands out as the era when political and business ethics appear to have reached their lowest ebb, perhaps only approached by the corruption of Ulysses S. Grant's Presidency in the 1870s and the excesses of the junkbond financed 1980s. The 1920s opened with Warren Harding's Administration being rocked by a series of scandals, particularly that involving the fraudulent leasing of government oil reserves at Teapot Dome, Wyoming. American society then proceeded to rush, with an increasing air of unreality, towards the abyss of 1929, fuelled by untempered consumerism and seemingly unbounded gullibility on the part of promoters and investors.

Easy Money, by Roger and Diana Olien, joins such classic studies as John Kenneth Galbraith's *The Great Crash 1929* and Burl Noggle's *Teapot Dome*, in providing a vivid picture of this hedonistic and unstable age. The Oliens have written a detailed and compelling account of the wave of oil company promotions, many of them fraudulent, which engulfed the United States during the 1920s. They portray a world inhabited by former patent medicine salesmen, tightrope walkers and small-town bankers who then 'rode the tracks and drove the dusty roads of America to gather in the dollars' from unwary farmers, school-teachers and widows; often raiding the obituary columns for names of potential victims. Touts in downtown Los Angeles directed interested 'suckers' to waiting buses; these took them to marquees erected amid the Californian oil derricks, where free refreshment was followed by a high-pressure sales pitch. Other investors were targeted from 'sucker lists', receiving streams of artfully composed letters which described unrepeatable opportunities to share in the fortunes being made in the petroleum industry. Names and visual images were also a vital part of the promoter's armoury: company names were chosen so as to instil confidence – 'Pilgrim Oil' or 'Uncle Sam Oil' – or as a naked appeal to greed – '500 Percent Syndicate' – whilst stock certificates were skilfully designed, with reassuring engravings of eagles and gushing oil-wells. Many Americans fell victim and, as early as 1923, estimates of the sum amassed in fraudulent oil promotions ranged up to $200 million; with as many as two million investors being involved.

The fatal combination of circumstances leading to this promotion mania are outlined in the opening chapter. Incomes, and particularly rural ones, had grown rapidly in real terms during the First World War. Patriotic citizens had also responded to government pleas to save rather than spend, by purchasing Liberty Bonds; in this way, some 18 million Americans became security owners for the first time. Celebrating the end of wartime austerity, Americans launched into an era of unparalleled consumerism and a craving for ever greater material wealth in the early 1920s; as President Calvin Coolidge solemnly proclaimed: 'wealth is the chief end of man'. And when influential figures like John J. Raskob, vice-president of General Motors, advised the readers of *Ladies' Home Journal* that the only route to true riches was through 'adventurous' investment, the stage was set for millions of ordinary Americans to seek instant wealth through buying securities or real estate.

As the Oliens demonstrate, the oil industry expanded dramatically between 1917 and 1921, and rapidly supplanted hard-rock mining as the prime speculative stock on the nation's exchanges. It thus joined the frenetic real-estate booms of Miami and southern California as one of the focal points of this headlong rush for riches. In the oil-fields of Texas, Wyoming and California, genuine and fraudulent oil prospecting schemes jostled for the attentions of the investing public; and often the promoters themselves found the dividing line between the two conveniently vague. Outside funds were a legitimate means of spreading risk in the highly uncertain world of oil exploration, but often there appears to have been little motive in the schemes of notorious promoters like S. E. J. Cox (who had previously been involved in selling bogus virility pills and useless contraceptives), other than to tap the gushing pools of American savings.

This book is not so much a conventional business history as a colourful narrative of greed and speculation, but it does raise some interesting points. It stresses the vital role of mass advertising in creating not only the American dream, but also the bond between promoters and investors. In particular, the Oliens emphasise the way promotional advertising exploited 'life-style' associations to reinforce its message; ordinary people could only share the experiences of the wealthy if they too became rich through property or stock investment. These bonds between promoter and investor were complex. The Oliens suggest that there was rarely a clear-cut predator–victim relationship; rather, both were usually caught up in the same frenzy of speculation and few promoters emerged with any real profit when their expenses had been taken into account. Basic managerial skills were rare in the margins of the oil business; S. E. J. Cox, for example, had no concept of his huge promotional outgoings, due to the chaotic state of his financial records, and this contributed to his eventual bankruptcy. Finally, this study clearly demonstrates the limited effectiveness of state legislation, such as 'blue sky' laws, and federal enforcement agencies in combating widespread fraud in oil promotions. In the interests of economy and drama, federal agents usually concentrated on prosecuting a few of the more spectacular cases, particularly where they could be sure of success. They even arranged a trial for two prominent Jewish promoters in a town where strong Ku Klux Klan support ensured lack of sympathy for the defendants.

Using a comprehensive range of sources, including surviving copies of promotional advertising and court records, the Oliens have produced a compact, well-balanced and highly readable account of this frenzied episode in American history. It makes significant contributions to a number of areas of economic, social and business history, and deserves to be widely read.

Touring the United States in the early 1830s, Alexis de Tocqueville had been concerned by the apparent cupidity of Americans and their susceptibility to fraud and bad faith. *Easy Money* suggests that little changed over the following century and judged from the context of the 1980s – the world of Savings and Loan, of Milken and Trump – it appears that even those people who remember their past may be condemned to relive it.

University of St Andrews CHRISTOPHER SCHMITZ

MARY O. FURNER and BARRY SUPPLE (eds.), *The State and Economic Knowledge: The American and British Experiences* (Cambridge: Cambridge University Press, 1990. Pp.xiv + 477. £27.50; $44.50).

This book explores the large issue of the relationship between the growth of the state and the growth of economic knowledge. When, in what form and with what effects did the state seek such economic knowledge? The contributors approach such questions by examining them in their own, sometimes quite narrow, area of expertise, rather than by writing more general, broad-sweep surveys. The editors are then left with the considerable task of drawing together the various scattered threads into some sort of coherent skein. In general this approach is successful, primarily because the standard of the contributions is high. These contributions comprise Donald Winch on the long-run development of the British Government's use of economic knowledge; John Lauritz Larson on John Quincy Adams and the early development of the American Republic; William J. Barber on the agnostic relationship between F.D. Roosevelt and economists; Robert M. Collins on economic 'growthmanship' during Truman's Presidency; Peter Clarke on the Treasury's view of how the British inter-war economy operated; George Peden on the Treasury and Keynesian economists in the 1940s and 1950s; Mary Furner on public investigation and the labour question in the Progressive era; Ellis W. Hawley on the inter-war development of the Bureau of Agricultural Economics and the National Bureau of Economic Research; Barry Supple on the British Government's use of official economic inquiries in the early and mid-twentieth century; Leslie Hannah on the advance of micro-economists within British Government since 1945; Jose Harris on the contribution of economic knowledge to the development of British social policy; W. Elliot Brownlee on economists and the American World War I taxation debate; and Jay Winter on the contribution of economists to the immediate post-World War II Royal Commission on Population. There is not a weak contribution, and many of them exhibit high scholarship. Somewhat surprisingly, in such a thematic book, many of the contributions are very accessible and are likely to prove of great use in lectures and seminars.

In the face of such a rich variety of offerings, the editors' introductory chapter moves quickly to emphasise the 'multidimensional influence of the state and policy formation on the substance and structure of economic knowledge'(p.4). Among the observations which the editors do feel able to make, emphasis is placed on the structure of the American federal and presidential system in which the very organisation of political institutions and debate make for more diversity and less continuity than in British policy discussions. Attention is also drawn to the role of crises in encouraging fresh thinking, a line of argument which could be linked with the wider ideas of Olson on vested interests and the recent return to considering the 'catching-up' hypothesis. Where the editors do appear to have understated their case concerns the role of information-gathering and technical expertise in shaping policy. Often economists and their thoughts are of little interest to policy-makers, but policy-makers do appear to have been much more heavily influenced by the results of fresh data and new analytical techniques. The development of national income accounting is noted by several contributors as having provided economists and statisticians with an important launching-pad and comparative advantage within government. Given the importance of technical skills and data collection, the absence in the book of any mention of the impact of computers is a little surprising. Nevertheless, the editors are clearly attempting to stimulate further thinking in a new area, not to produce any definitive statements. As such, the book succeeds. This is a scholarly collection of papers, each one well worth reading in its own right, which together point to a stimulating and potentially extremely rewarding area for further research.

University of Edinburgh MARTIN CHICK

BYUNG-NAK SONG, *The Rise of the Korean Economy* (Hong Kong: Oxford University Press, 1990. Pp.xviii + 278. £17–50).

Despite South Korea's increasing industrial might, the forces which have shaped that country's economic growth remain poorly understood in the outside world. In recent years it has been common for Friedmanite advocates of the free market to group Korea with other Asian industrialising countries as an economy which relies largely on the private market, and to contrast these *laissez faire* success stories with the failures of planned economies like China and India.

The Rise of the Korean Economy soon lays that myth to rest. In the days of President Park Chung-Hee, we discover, Korean entrepreneurs who wished to establish a firm were first obliged to obtain 312 signatures from various government agencies, and the government's industrial objectives were achieved by innovative, not to say drastic, methods. (Companies which failed to comply with export targets, for example, might be threatened with detailed tax audits or even have their electricity supply disconnected.) Since then, of course, the techniques of industrial planning have become more sophisticated, but Korea's economic destiny continues to be firmly managed through a mixture of direct and government macroeconomic policy incentives.

Byung-Nak Song is well qualified to guide the reader through the complexities of Korean industrial development, having himself been involved in the economic planning process as a member of the powerful Korea Development Institute. His book is a succinct, lively and readable account of the forces at work in Korean development, and would make an excellent introduction, either for university students or for the general reader who wishes to understand more about the 'Korean Miracle'.

As a former government adviser, Song predictably stresses the achievements of state industrial policies. His emphasis on Korean social harmony and loyalty seems open to question in the light of the country's recent history of labour unrest and student activism. However, the book does also provide a careful and reasonably balanced assessment of welfare and equity issues in Korean development as well as making some mention of the country's emerging environmental problems.

For those whose interest lies mainly in the area of business structures, the book's chapter on 'Understanding the Korean Management System' may prove something of a disappointment, as it consists largely of broad generalisations about the Korean managerial style, and offers little in the way of concrete detail or examples. A much more useful analysis is provided by the section on industrial structure and policy, which gives a concise outline of the role of public enterprises and of Korea's big business groups (the *jaebol*), with a brief case study of one particular *jaebol*: the Samsung group.

Throughout the book, frequent comparisons with other countries – particularly Japan and Taiwan – help to place Korea's experience in the wider context of East Asian industrial growth. They also serve to highlight the considerable differences between the developmental models pursued by various Asian industrialised and industrialising nations. Bung-Nak Song's study is likely to become a standard source of reference for the growing number of Western readers eager to learn more about these models and their implications for the contemporary world economy.

University of New England TESSA MORRIS-SUZUKI

KOSMAS TSOKHAS, *Markets, Money and Empire: The Political Economy of the Australian Wool Industry* (Melbourne: Melbourne University Press, 1990. Pp.viii + 235. $ Australian 29.95).

This is a quite provocative book which builds a case against the notion of Australia's dependent position within the British Empire. It argues that an 'imperial fallacy' has distorted interpretations of Australia's relationship with Great Britain and of the actions of such Australian politicians as W.M. Hughes, S.M. Bruce, J.A. Lyons and K.G. Menzies.

Using the wool trade as a vehicle for examining Australia's relationship with Great Britain since the nineteenth century, and through the study of the archives of six major finance and pastoral broking companies, as well as those of wool growers' organisations and trading and mercantile businesses, Tsokhas is persuaded that the relationship was far from one-sided. He develops a case that Australia maintained a high degree of independence within the Empire even in wartime. He argues that economic nationalism and the common interests of all connected with the wool trade ensured that loyalty to Britain was subjugated to economic interests, commercial pressures, and internal political motives. Although the interests of wool growers, finance and trading companies were, by no means, always identical, there was, he believes, sufficient common purpose for all those involved in the wool trade to present an aggressive, entrepreneurial attitude to the outside world, particularly to Britain. This enabled them to avoid the syndrome of marginalised, primary producers and to ensure a strength of organisation which allowed Australia to maintain control over its trading relationships. That strength gave considerable bargaining power, he argues, and autonomy in its relationship with the imperial centre.

Independence is explained in a number of ways. In the nineteenth century Australia gained control over its wool trade, allowing the returns to the trade to accrue primarily within Australia. In the twentieth century that independence, he argues, allowed Australia to pursue policies in terms of its own interests, rather than those of British foreign policy. Unity of purpose across various wool interests, in spite of different internal objectives, presented a united political front and a pressure on the government and politicians to protect Australian wool interests. The high role of wool in Australian exports ensured a strong political profile for the trade. Even in wartime, when the British government had a monopsonistic position in the purchase of Australian wool, and might have gained super-profits at the expense of Australian wool growers to the advantage of British manufacturers, the Australian wool growers' interests maintained a paramount position. Tsokhas argues that Australian vulnerability to British political and military interests was overcome by the strength of Australia's hand and its superior knowledge of the wool trade. On the one hand, Britain needed to ensure the supply of wool for uniform cloth and to constrain supply to the enemy. It also needed Australia's co-operation in waging war. On the other hand, Australia had its own economic interests. It needed to avoid financial disaster. It had alternative potential outlets for its product. And its wool growers and associated interests were well-organised at state and federal levels. The political power they exerted was, Tsokhas stresses, far greater than has previously been realized. Australian bargaining power was aided by the seniority of its negotiators, who were single-minded in purpose and clear-cut in objective compared with the multitude of objectives and purposes of the British side. The information on which negotiations were based derived from Australia, which could keep one step ahead of Britain as a result.

This revision of Australia's position in relation to Britain leads Tsokhas to argue that the rural sector avoided dependency through imperialist pressure; that it did not behave like 'marginalized primary producers living off the crumbs that fell from the imperialist table'. And he suggests that pessimistic views of the consequence of weakness of industrial development in Australia need reconsideration.

The book argues the case well for the position the wool-growing industry maintained economically and politically in Australia and for the significance of the industry in the determination of commercial and political relationships between Australia and Britain. But the extent to which these relationships dominated, to Australia's advantage, the imperialist connection and ensured Australia's autonomy from imperialist pressures, in peace and in war, and particularly the view that Australia's bargaining power put it in a position where it could 'exploit' Britain, will undoubtedly generate more debate.

University of York DAVID T JENKINS

PHILLIP OPPENHEIM, *The New Masters: Can The West Match Japan?* (London: Business Books Ltd, 1991. Pp.viii + 431. £20.00).

It is no surprise to find that a Conservative MP has written a book about post-war Japan that is a plea for free trade and minimal government intervention. Oppenheim's hero is Cobden and his opinions suffuse the text. Thus, domestic self-interest groups that put pressure on the government to protect them from external competition and international institutions which abet, either consciously or not, such desires are the bogeymen that haunt the economic environment.

The core of the book is part III, on trade, and part IV, on the role of government. Part III attacks the myth that Japanese success was based on economic malpractice (including protectionism and dumping) by showing that 'the West' has been at least as protectionist and unfair in its policies as Japan. Indeed, Oppenheim goes further and claims that it is Japan which, in the post-war period, has come closest to the Cobdenite ideal and it is this which explains the Japanese miracle. Thus, the problems of 'the West' could be solved by it truly embracing free trade rather than simply paying lip service to it.

In part IV he claims that the Japanese government has been no more or less interventionist than the governments of 'the West' but that it has been more successful because its policies have run with, and not against, 'the grain of market forces' (p.137). However, this claim is based on a series of anecdotes and no serious attempt has been made to test it systematically. Oppenheim's proof of the success of Japanese intervention is that its industrial policy encourages structural movements from declining to expanding industries (although, crucially, he fails to say how such industries are identified) whereas in the poor old 'West' the state is a hostage to powerful self-interest groups which want only to defend their economically defunct industries.

These explanations of Japanese success, and indeed many other ideas expounded in the book, are not original and in the end the search for the holy grail into which the essence of Japanese success has been distilled (no doubt by Ebisu, the god of money) is reduced to absurdity: Japan succeeded because it did all the right things (p.231). If only 'the West' could always adopt the best technology and practices; if only it could be brave enough to enter new markets and survive fierce competition; if only its education system produced literate, numerate, intelligent people for industry to absorb; if only its companies could have good industrial relations; if only its managers put the customer first. It is really very easy to succeed.

The great weakness of the book is that it lacks a strong analytical framework and that it has a tendency to become simply a string of seemingly unending case studies of Japanese trade, industries, and firms. A central problem is the constant comparison between Japan and a non-existent entity called 'the West', which often simply means the USA or the UK and which ignores, most pointedly, the success of the German economy. In its defence it must be said that this is not written as a scholarly tome but as a populist book which is trying, bravely and correctly, to redress some of the wrongs which the media and politicians have done to Japan. Thus, the academic may well find the book useful as a reservoir of stories that can be dipped into and used for illustrative purposes in teaching but will find it less useful as a serious research prop.

London School of Economics W PETER HOWLETT

STEPHANIE JONES, *Working for the Japanese: Myths and Realities, British Perceptions*, forewords by Sir Peter Parker and Haydn Abbott. (London: Macmillan Academic and Professional Ltd, 1991, Pp.xiv + 280; illus. £20).

Working for the Japanese should be warmly welcomed because it brings clarity to matters which have hitherto been obscure. Dr Stephanie Jones bases her work on 20 myths about Japanese business which are regularly quoted and about which most people are probably ill-informed; these include 'life-time employment' and 'consensus decision making' in Japanese firms. She then analyses the validity of each of the myths, demonstrates the real and imagined impact of each idea, and advises prospective employees of the Japanese how to deal effectively with each situation as it arises.

As each myth is introduced it is modified, considered, and demolished – but not quite, so that the picture which emerges is unexpected. It is of Japanese businesses, which may well operate in the home country as we have come to expect, but which show much greater flexibility when they are operating abroad. One of the important results of this research is the demonstration of the way in which Japanese attitudes are modified by the experience of establishing Japanese firms in Britain. The book also emphasises the importance to the Japanese executive of a thorough command of English, although as yet few English executives have learned Japanese. In the case, for example, of Myth 12, 'The Japanese are sexist' (p.156), it becomes apparent that the Japanese are prepared to regard Western women, in the West, according to their capabilities and achievements rather than their sex.

The information given in the Appendices of *Working for the Japanese*, which add up to 50 pages of the book, include 'Strategy for British Executives to make the Most out of Working for Japanese Companies in Britain' and 'Notes and Advice for those Working for Japanese clients in Britain'. This section is filled with good practical points which will be of special value to managers, advisers and consultants.

The business historian may find the information in the book useful and pertinent, but could consider the historical background to the firms which Dr Jones explores rather thin – one example only. The Bank of Tokyo – formerly the Yokohama Specie Bank – is quoted as being the 'only foreign-exchange specialist bank in Japan with a worldwide network' (p.46). Why is this? There is no indication that the Yokohama Specie Bank (1880) was the first overt challenge by Japan to Western monetary institutions, founded to collect specie worldwide and so reverse the damage done to the Japanese economy by the overseas banks then operating in Yokohama.

University of Glasgow OLIVE CHECKLAND

LARRY NEAL, *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason* (Cambridge, Cambridge University Press, 1991. Pp.x + 278. £27.50).

This is an excellent volume, bringing together much of Larry Neal's earlier work on the growing sophistication and closer integration of financial markets in Western Europe from the late seventeenth century to the early nineteenth. Much of this scholarly work incorporates a judicious mix of economic and financial theory, statistical analysis and historical investigation. Many of the chapters can be read as free-standing essays, but the author is fastidious in providing effective synopses that carry a carefully argued thesis throughout the book. Indeed, some readers may find the persistent drive towards a logical conclusion somewhat unnerving – more especially as Neal is insistent in his claim of the relevance of his findings for the operation of today's international financial markets. In all his investigations the author is anxious to stress fundamentals – that economic agents act rationally and that unfettered markets work well. Such truths hold as much for the early modern period as they do today, and armed with such conviction the economist can offer insights into historical events. His main findings carry important implications for the economic history of the period. He stresses the degree of financial sophistication embodied in the methods used by the early trading companies (especially the Dutch and English East Indian Companies) to mobilise capital. He also highlights how closely integrated were the London and Amsterdam markets for those few securities that were widely traded at the time. He does this both by a close analysis of available time series on stock prices and exchange rates and by an examination of the impact of financial crises. He concludes that this period was one of financial innovation which, in effect, gave birth to the financial capitalism of the title. In a related essay towards the end of the book he also attempts to establish the importance of the French wars in determining the course of the British industrial revolution through their impact on the composition of demand and the floating of the pound sterling. While the analysis here is not wholly convincing, it is nevertheless as thought-provoking as the rest of book. In all, Neal has produced a stimulating, well-researched and finely-argued thesis.

University of Leeds MICHAEL COLLINS

PHILLIPPE JOBERT and MICHAEL MOSS (eds.), *The Birth and Death of Companies: An Historical Perspective* (Carnforth: The Parthenon Publishing Group, 1990. Pp.viii + 242. £16.50).

This collection of conference papers marks a concerted attempt to establish business demography (or *la demographie des enterprises*, as the project involves several French historians) as an area requiring much more detailed investigation. The project brings together British, French and Indian historians keen to investigate a subject which could provide insights into many different aspects of business creation, development and termination. Indeed, the editors have set a most ambitious research agenda which aims to unravel such vitally important issues as comparative advantage, the role of the entrepreneur, and the structure of capital formation as a basis for understanding the behaviour of firms in a variety of legal and market environments. They also provide a helpful introduction to the complexities of company law in England and France, outlining the pitfalls awaiting those historians willing to venture into an area which by its very nature must involve extensive speculation on the reliability of a data base built on incomplete information.

It is the fragility of the data base for business demography which encourages the extensive use of econometric techniques as the main method of deriving conclusions from the available evidence. Unfortunately, however, this can sometimes lead to surprising conclusions which might diminish the credibility of the whole project. For example, Professor Foreman-Peck concludes that the 1856 Companies Act could have been instrumental in precipitating the relative decline of Britain's economy in the late nineteenth century, while Dr Alline asks whether Toulouse could be regarded as the 'French Japan' (p.136). Of course, these are research papers, and authors ought to be granted some licence to speculate in order to generate effective discussion of the issues, but the publication might have been more successful if some of the conclusions had been less ambitious. Another volume of papers is planned, and perhaps some of the more contentious arguments will have been substantiated more carefully, but at this stage the reader must not expect to see anything more than a series of projections and hypotheses linked to initial investigations. Moreover, in future one might expect greater homogeneity in the methods used to analyse data, giving the editors an opportunity to derive generalised conclusions from the individual studies, because at this stage such an exercise seems impossible, although perhaps one might argue that econometric techniques do not always help business historians understand the subleties in decision-making. It would also not be too much to expect the econometricians to moderate their highly quantitative approach by using some of the more qualitative work already available. A good example might be Dr Storey's analysis of small firms, where the conclusions derived from his sampling techniques might well benefit from a comparison with the arguments of industrial economists like Edith Penrose.

Where this publication really does achieve something is in directing business historians through the problems of dealing with information on company births and deaths in a range of legal situations. The 14 essays mainly cover England, Scotland, and France (with one on India), and each provides a detailed insight into the difficulties of identifying when a business was created, whether a bankruptcy marks its termination, and what sources can be tapped in unravelling such mysteries. In this context, there are discussions of the value of trade directories in Britain and the *cadastre* in France, as well as the more obvious company and bankruptcy records. While at times some authors appear a little sanguine in their approach to the data, business historians will benefit from the warnings contained in most papers, while at the same time accepting the need for speculative conclusions at this stage of the project.

Business historians can anticipate further progress in this important field of studies. Business demography deserves much more extensive research, and the papers in this volume are only intended as a first step in the elaboration of firmer conclusions relating to the research agenda outlined earlier. There is much to be gained from reading this book, but one would certainly not recommend it to undergraduates looking for an introduction to the subject, and business historians in general must await the next volume before any clear themes can be derived from the studies. The editors and their contributors must, though, be applauded for publishing what at this stage can be regarded as initial speculations, opening up the discussion of subjects long neglected in both Britain and France.

University of Manchester JOHN F. WILSON

DANIEL YERGIN, *The Prize: The Epic Quest for Oil, Money and Power* (London: Simon & Schuster, 1991. Pp.912; photos; maps. £20.00).

Daniel Yergin, the American author of this well-researched, comprehensive study of the world oil industry between 1850 and 1990 is President of Cambridge Energy Research Associates, an international consulting firm which he founded in 1982. This may explain why Yergin did not intend to write a book for the scholarly market but rather aimed for the top of the best seller list. Typical of Yergin's approach to this fascinating but complicated subject is the comparison he draws in the Prologue (p.12) between Churchill as First Lord of the Admiralty in 1912 and Saddam Hussein invading Kuwait in 1990. Both men, he argues, regarded oil as the prize which bestows mastery upon he who captures it.

The scholar who looks for evidence to support this bold contention will be disappointed. Yergin's account of Churchill's years at the Admiralty contains no hint of Hitlerite megalomania. Since Yergin uses Churchill's own version of his venture in oil and since Churchill, when he wrote this, had every reason not to tell the embarrassing story of his failure to capture the prize, one must ask the question: what went wrong with Yergin's research? One possible explanation is that Yergin limited his research to data available in the English language. Churchill's opponent in 1912–14 was, however, a European consortium, the Turkish Petroleum Co. (TPC). Its shareholders were the National Bank of Turkey (50 per cent), the Rothschild-Royal Dutch/Shell group (25 per cent) and the Deutsche Bank (25 per cent). Henri Deterding, the founder of Royal Dutch/Shell, controlled the consortium and not Gulbenkian as Yergin states. It was Deterding who, in March 1914, prevented Churchill from capturing the prize by forcing the British government to accept a participation in his multinational consortium. And it was Deterding who, in 1923, hired Churchill as a consultant for his negotiations with the British government to buy their majority shareholding in what is now BP. Yergin has over-looked archives in Holland, France and Germany which must be consulted to discover the story Churchill refused to tell.

Yergin has arranged his material chronologically in five parts, subdivided in chapters. Part I, 'The Founders', deals with the period 1850–1914. It tells the story of the industry's first giants: Rockefeller and Standard Oil, Deterding and Royal Dutch/Shell. Here Yergin overlooks the important role played by Russia's powerful finance minister, Count Witte. He therefore makes the incorrect statement that the Russian–American export market agreement of 1894 'never came into force' (p.72). Yet the famous 'Notice to Oilproducers', which Yergin mentions on p.53, was written specifically because the agreement had come into force. In this notice Rockefeller announced a fundamental change in the way Standard would from now on calculate its daily 'posted price'. No longer would the quotations of the oil exchanges be used but prices 'would be as high as the markets of the world will justify'. Immediately after the publication of the 'Notice' Standard raised its posted price to the levels quoted at Batum, thus granting Witte's request.

Part II, 'The Global Struggle', covers the period 1914–40. From a historical point of view the inter-war years are the most important for understanding the revolutionary changes within the industry. Though Yergin manages to put an impressive number of facts in the 115 pages he allots this part, he misses the essential ones needed to explain the events which led to the historic Achnacarry conference of 1928. This time it was Stalin who wanted to raise prices in the export markets because the Soviets' nationalised oil industry was a highly inefficient producer and could not compete in the export markets where prices fell by 50 per cent between 1922 and 1927. One of Stalin's more successful moves was to hire Gulbenkian as agent for the Soviet Nafta Syndicate. As a reward Gulbenkian got permission to buy Rembrandts from the Hermitage collection at bargain prices. An interesting parallel with the Hammer saga, which Yergin has missed.

The story of oil in the Second World War is told in part III, with much emphasis on Roosevelt's oil embargo against Japan and Germany's synthetic oil industry, based on the Bergius patents. Part IV, 'The Hydrocarbon Age', and part V, 'The Battle for World Mastery', bring us via Mossadegh, OPEC and Qaddaffi to Saddam Hussein. Here Yergin is clearly on familiar ground. His handling of the (in)famous oil cartel case of the 1950s reveals a confidence one misses in his approach to the same problem before 1940.

Though Yergin's book may disappoint the scholar, it has, in my opinion, great merit and should be on a required reading list. Yergin's team of researchers have done a remarkable job in collecting data available in the English language. The 32 page index gives easy access to the text. Those footnotes which I have checked I have found accurate and fair. The large (97) number of photographs have instructive captions. Though the list of 'Selected Books, Articles and Dissertations' contains more than 600 titles, I missed some personal favourites like James B. Ramsey's *The Oil Muddle* (New York, 1981) and Charles Doran's *Myth, Oil and Politics* (New York, 1977).

Hoover Institute,
Stanford University, California PAUL A. HENDRIX

JOHN G. CLARK, *The Political Economy of World Energy: A Twentieth Century Perspective* (Hemel Hempstead: Harvester Wheatsheaf, 1990. Pp.xx + 397; maps. £30.00).

In this book Professor Clark draws on a wide array of secondary material to write an overview of energy in the world economy in the twentieth century, examining the various energy industries of coal, oil, gas, electricity, and nuclear power. Adopting an essentially narrative approach, he traces the energy resource endowments of individual nations at different stages of their economic development and chronicles the shifts between different types of fuel, making extensive use of tables to illustrate the main trends. His emphasis is on the oil industry, as befits its importance as an energy source in the twentieth century.

In the early chapters, Clark describes the growing use of oil and the relative decline of coal prior to World War II, when a handful of multinational oil companies (MNOCs), mainly American and British, took up oil concessions in lesser developed countries (LDCs) and came to dominate the international oil industry which fuelled new energy-intensive industries and consumer habits, most notably those associated with road transport. The theme of growing oil consumption is pursued into the post-war years when the energy-intensive industrial economies of the West and Japan became increasingly dependent on oil imports from LDCs in the Middle East and North Africa. Lulled by the abundance of cheap oil, profligate energy users in the advanced economies failed to take heed of the threat to western hegemony over oil posed by the increasingly assertive oil-producing LDCs, which gained collective weight through the formation of the Organisation of Petroleum Exporting Countries (OPEC) in 1960. The West and Japan were thus unprepared for the dramatic upheavals in world energy which punctuated the 1970s and 1980s when the LDC producer states wrested control of their national oil industries from the MNOCs and a series of oil crises shattered earlier assumptions about the easy availability of cheap and secure oil supplies. Intermittent fears, real and imagined, about physical supplies, coupled with extreme oil price volatility and growing concern about the environmental consequences of burning fossil fuels failed, Clark argues, to elicit effective countermeasures in the industrialised states, whose efforts to diversify their energy sources, improve energy efficiency, and conserve non-renewable resources are characterised as inadequate and myopic. Meanwhile, the oil-producing LDCs failed to translate their huge oil revenues of the 1970s and early 1980s into sustainable broadly based economic development, given the generally weak linkages between their oil industries and other economic sectors, the inequity of internal income distributions, and a tendency to opt for high-profile industrial projects at the expense of agricultural development. As for the less fortunate energy-importing LDCs, their prospects of economic growth were generally retarded by the huge oil price rises of the 1970s. In conclusion, Clark asserts that the real energy crisis has been one of over-consumption which imperils the globe.

Whilst dependence on oil thus forms the main thread of the book, Clark sustains an impressively wide coverage, both geographically and in commenting on other energy sources from non-commercial organic fuels (mainly wood) to nuclear power. This breadth, combined with the disciplined organisation of amply referenced secondary sources, provides the main appeal of the book. On style, the use of American vocabulary such as 'essentiality' (pp.52 and 329) may not be to the liking of British readers. More importantly, specialists in individual energy sectors, companies or countries may well find fault with the book in some particulars. For example, there is the erroneous statement that the Burmah Oil Co. and the Anglo-Persian Oil Co. (later BP) merged in 1909 (p.35). Furthermore, whilst relationships between the MNOCs and the oil-producing LDCs were undoubtedly fundamentally changed by the events of the 1970s, Clark's depiction of the MNOCs as mere 'adjuncts' of the LDC producing states 'following the orders of their masters' (p.372) suggests a subservience quite at variance with the continued commercial independence of the MNOCs. For the most part, however, those seeking a general wide-ranging study of energy in the twentieth century will find good, if somewhat uninspiring, value in this book.

British Petroleum Company plc J.H BAMBERG

DONALD N MCCLOSKEY and GEORGE K. HERSH, Jr, *A Bibliography of Historical Economics to 1980* (Cambridge: Cambridge University Press, 1990. Pp.xii + 505. £30.00).

This book provides a bibliography of what is variously known as new economic history, quantitative economic history, cliometrics, econometric history, or historical economics, the latter now being McCloskey's preferred term. It contains about 4,300 items published mainly between 1957 and 1980. The first half of the volume consists of a listing of items by topic. The 17 topics are: collections, textbooks and sources; method; demography; national accounts; economic growth; transportation; commodity production and industrial organisation; services and consumer demand; agriculture; international finance and investment; financial markets; price indices, inflation and the money supply; foreign trade; technology; labour supply; regional and urban studies; government and politics. The geographical bias of the literature is reflected by the fact that most of the topics are split between the United States and the rest of the world, with the rest of the world heavily biased towards Britain. Economic growth is the only topic with a periodisation, before and after the Industrial Revolution (not dated). The second half of the volume lists the items alphabetically by author.

To be really useful a bibliography needs to be complete and up-to-date. Although this bibliography is complete on its own terms, with no glaring omissions, I wonder how useful it really is to have a bibliography that deliberately excludes all works using a different methodology? The really worrying thing about this book, however, is that it is being published in 1990 covering material only up to 1980. McCloskey notes in the introduction that the project began in 1978 and it is listed in the bibliography of McCloskey's 1987 MacMillan pamphlet on *Econometric History* (which appears to be a product of the same project) as appearing in 1988. These delays have robbed the volume of much of its value without a major updating. The inclusion of working papers that are more than a decade old, for example, is not very helpful when many libraries only keep a five-year stock. Also, many of the big names of the 1980s have only a handful of items, compared with several pages for the big names of the 1970s. It is difficult to see who is going to buy this book.

University of Warwick S.N. BROADBERRY

EVAN MAWDSLEY, NICHOLAS MORGAN, LESLEY RICHMOND and RICHARD TRAINOR (eds.), *History and Computing III: Historians, Computers and Data. Applications in Research and Teaching* (Manchester: Manchester University Press, 1991. Pp.xx + 213. £29.95 hb: £12.95 pb).

Having witnessed the birth of the Association for History and Computing in 1986, I began reading these papers from the Association's 1988 conference with eager anticipation, heightened by the editors' promise that they would reveal the 'state of the art' in historical computing. What is the nature of the revelation? According to the editors it is the 'astonishing upsurge' in the use of computers by historians, the switch from statistical packages to data base management systems, the renewed concern for the integrity of sources, the shift from mainframe to microcomputers and distributed computing systems, the rejection of sampling in favour of recording data 'warts and all', and a growing appreciation amongst historians that the computer can and should be applied to research and teaching. These revelations actually beg many questions. More historians *are* using computers but, as a recent survey by Roger Middleton and Peter Wardley showed, in economic history, where computers have been employed for rather longer than in other areas of historical enquiry, 'general acceptance of information technology has yet to occur'. Rejection of sampling seems a trifle premature, simply because British historians have actually used sampling techniques relatively infrequently, certainly by comparison with their American colleagues. The abandonment of the mainframe does reflect prescriptive policy on equipment purchasing, but for financially hard-pressed arts departments the mainframe retains one great attraction: the costs of computer time and consumables are usually met centrally in most institutions.

In terms of coverage the art of historical computing is extensive and the volume reflects this with no fewer than 29 papers, distributed between sources (4), methods (7), teaching (9), and research (7) plus foreword and conclusion. Those present in Glasgow doubtless enjoyed this varied menu but it left me wondering whether it was sensible to publish all the papers, for a problem with computing conferences is that much of the intellectual benefit occurs outside the formal sessions, in the informal exchange of information on practical computing problems; this is extremely difficult to capture in published form. The volume squeezes a quart into a pint pot and, whilst each contributor achieves a publication, the text is extremely terse. A more selective approach to publication with fewer and longer papers, and the adoption of the scientific community's 'poster' approach, that is, very short summaries of research activity sufficient to bring work to the attention of other scholars, might be more productive. The editors acknowledge that the volume presents 'something less than a complete image of the conference' and thus raise an important and unresolved issue, namely, the best medium for transmitting the applications and results of the IT revolution.

University of York RON WEIR

CHARLES WOLF, Jr, *Markets or Governments: Choosing between Imperfect Alternatives* (Cambridge, MA, and London: MIT Press, 1990. Pp.xvii + 220. £9.95 pb).

As business historians forge ever closer links with the social sciences, one topic above all assumes a key role in their joint studies: that of market failure. The unfettered market, or what Adam Smith called the 'invisible hand', which converts the actions of varyingly motivated individuals into an economic system promoting the good of all, has been spectacularly effective in determining what goods or services that system should produce, how, and for whom. Even so, its inability to perform additional tasks imposed on it by society makes a public sector essential. Richard Musgrave, in his great work on *The Theory of Public Finance* (1959), sets out the functions of the modern state as to optimise the allocation of resources, the distribution of income and wealth, economic stabilisation, and growth.

Oddly enough, even though Professor Wolf's chosen subject is the relations between the market and government, he mentions neither Smith nor Musgrave; instead, we are offered J.K. Galbraith and Milton Friedman, fashionable gurus who – in their works cited here – are more adept at making superficial assertions than at painstaking by analysing questions that are both fundamental and worthy of very deep thought. Having metaphorically set up a media debate between the proponents of state activity and of the market system, Wolf devotes nearly 200 pages to laying down the basis of comparison between markets and governments and of possible choices between the two.

Along the route there are some quite sensible discussions on such matters as the free-rider problem, caused by people who use publicly-provided services without paying for them. However, he fails to disguise his antipathy to central planning, which boils over into an ungainly polysyllabic final paragraph, which is the mirror image of the mindless jargon-ridden rhetoric so beloved of those on the left (p.177). I suspect that in the book, apparently written between 1984 and 1987, the author was waging the last war when it was all but won. It would have been instructive to have Wolf's analysis of the situation in Japan, here appreciatively described as a 'market econmy', but in reality one with a public-sector planning system which pertinaceously and very effectively uses overall economic strategy and industrial and commercial policies to promote national interests.

Wolf defines the central thrust of his book as a contention that predictable types of inefficiency are inherent in non-market activities (p.125). To this end, he deploys two terms of his own invention, namely 'non-market failure' and 'internalities'. Unfortunately, striking phrases may dazzle audiences in the lecture theatre, but can appear rather tawdry when set down in cold print inside an academic monograph.

As to the former, market failure is a highly serviceable concept: much production and consumption – particularly of noisy services such as pop concerts – can lead to external costs for which the victims cannot be fully compensated. Problems of identification and/or enforcement make it most sensible for government to intervene, often with direct controls. Wolf explains non-market failure as the absence of non-market mechanisms for reconciling decision-makers' calculations of their private costs and benefits with those of society as a whole. It may well be true that the US public sector is as venal and wasteful as Wolf suggests (p.49); yet economic calculations are not very apposite here, because there is no such thing as a non-market system in the sense of a self-correcting mechanism. For example, an equilibrium may exist between some medication and the progress of a bodily illness, and that medication may well fail to cure the patient. However, if death occurs and no treatment has been given, it would be illogical to speak of non-medication failure.

Likewise, 'externalities' may be handy as an economic term to comprehend both external benefits, such as the prominent clock on the local factory, and external costs, such as the smoke that the factory puffs out. Wolf defines internalities as the private internal goals possessed by public agencies, which set or influence the agencies' real agenda; hence non-market agencies often develop 'internalities' which may be at variance with their declared aims. Since by definition there cannot be an opposite of externalities, the reader can only harbour the unworthy thought that Wolf himself has a hidden agenda in striving to undermine a very useful tool of economics by inventing an entirely inappropriate converse to it.

To sum up, it is useful nowadays for business historians to understand about market failure, which helps to explain both why firms come into existence and why and how governments operate. They are not likely to benefit much from the book under review.

University of Reading T.A.B. CORLEY

GERALD D. FELDMAN and KLAUS TENFELDE (eds.) *Workers, Owners and Politics in Coal Mining: An International Comparison of Industrial Relations* (New York: Berg, 1990. Pp.447. £45.00).

This volume aims to relate and comparatively evaluate industrial relations in the coal mining industries of the more notable Western industrial nations. This is not yet another collection of loosely related conference papers, but a carefully co-ordinated series of six country studies cast in a loose analytical framework established by the editors. The contributions are generally of a high standard, as one would expect from the experienced and expert historians assembled for this volume. Industrial relations are defined broadly and common concerns in each study include employer and state welfare provision, the structure of the industry and its markets, technological change, labour process, and the coal industry's special relationship with the state. There is also consistency of periodisation from the late nineteenth century to the 1980s – although the contributors are clearly most at home in the first half of the twentieth century.

That said, there are some significant differences of approach and interpretation. The studies of Britain and the United States by Church and Brody rely very largely on the secondary literature, offering first-rate summaries, whereas the essays on Germany (Weisbrod), France (Michel), Belgium (Kurgan-van Hentenryk and Puissant) and Austria (Mathis) offer a well-balanced combination of new research and literature review. A more significant divergence between the Anglo-American studies and those from the continent of Europe lies in the former's more acute awareness of the salience of economic forces. Politics is accorded considerably greater explanatory value in each of the discussions of coal industrial relations on the European continent. This is perhaps as it should be, reflecting a well-established divergence in approaches to the discipline. Nonetheless, the value of the volume as a tool for comparative analysis is reduced in those country studies where economic conditions are largely ignored, or insufficiently integrated into the explanatory framework.

Each contributor continues the trend towards a greater awareness of employees as an important force shaping the conduct of industrial relations, and several essays present the findings of new research on employer–labour strategies in the coal industry. This welcome attention lends little support to those who attribute to employers the crucial determining role in the development of bargaining systems. At many of the turning points an often uneasy alliance of labour and state provided the essential driving force for change. In view of the wealth of analysis of state labour and employer relations contained in the country studies, it is surprising that no serious attempt was made to evaluate the conceptual and theoretical work of Zeitlin and others in this area.

Indeed, conceptually this volume is rather thin overall. It is a notoriously difficult task to develop and sustain an effective framework for the comparative analysis of industrial relations. Nonetheless, neither of the editorial contributions make any serious attempt to contextualise the country studies within any general analysis of change in industrial relations systems over the last century. Tenfelde's brief introductory chapter surveys some of the secondary literature and endorses the calls made elsewhere for a greater emphasis upon institutions and employer interests. The core of Feldman's concluding essay consists of a detailed comparative discussion of the German and British cases emphasising divergence, appended to which is a brief consideration of the relative position of the other countries studied here. Corporatism receives mention in Feldman's conclusion and elsewhere in the volume. Opinions vary, and a number of contributors reject corporatism in favour of tripartism – a term of rather greater descriptive power than analytical content. This apart theory gains scant attention.

Overall this was a valuable exercise. The editors are to be congratulated for having compiled a tightly integrated series of high quality studies. It is here that the volume's strength lies. The country studies provide excellent summaries for the non-specialist and often more besides. Whilst the specialist in the industrial relations of coal may not learn anything new from the chapter concerning their own favoured nation, the stimulus to think comparatively will provide new insights for most.

Humberside Polytechnic TONY ADAMS

ARNOLD HEERTJE and MARK PERLMAN (eds.), *Evolving Technology and Market Structure: Studies in Schumpeterian Economics* (Ann Arbor: University of Michigan Press, 1991. Pp.vi + 351. £35.00).

This collection of essays emerged from the Second International Congress of the J.A. Schumpeter Society held in 1988. The first section of three papers explores aspects of Schumpeter's own work on business cycles and in relation to that of Walras and Keynes. Rather curiously, since Schumpeter is associated with disequilibrium states, he held Walras in high esteem and did not care for Keynesian ideas. Goodwin explains this in terms of Schumpeter's rejection of aggregate analysis. But Minsky argues that Schumpeter and Keynes are compatible with each other, and by inference not with Walras's general equilibrium, because both stressed the importance of money as a real influence and sought a unified price and monetary theory. Furthermore, Minsky asserts, the Schumpeterian vision of development requires, in the context of the modern world, that financial entrepreneurs as well as producers be recognised as essential agents in the innovative process.

The rest of the collection, some dozen essays, concentrate on a problem with which Schumpeter is closely associated and which has obvious interest for business historians, namely the process of technological innovation and growth. In a most stimulating paper, Lazonick formulates three typologies of innovative capitalism reflecting successive historical phases in modern development. The British mode was characterised by the owner-manager and was critically restricted by financial limitations since external capital injections would have eroded control. The American form of managerial capitalism overcame this limitation but eventually alienated its workforce through pressure for productivity advance. Both types segmented the three component groups in the organisation, the British dividing generalists from specialists and operatives while the American divided the operatives from the other groups. But the third typology, Japanese collective capitalism, has avoided this crucial flaw by giving lifetime employment and leaving skills and initiative on the shop floor. This organisational perspective on different forms of historical capitalism is likely to generate substantial debate and analysis.

The Japanese approach to innovation is scrutinised in several papers. The rapid adoption of power looms in textiles from five per cent of total capacity in 1908 to 85 per cent 30 years later is explained in terms of increasing factory size to realise productivity gains, aided by the skilled indigenous engineering industry, which was adept at copying and modifying imported technology. In the very recent past, the development of joint research and development programmes in the Japanese computer industry is analysed by Wakasugi. The purpose of this collusive effort was to develop a technological base sufficient to challenge the international domination of IBM, a venture which gained from strong government support. While the market comprised an oligopoly of some ten firms, the threat of new competition, as suggested in recent theoretical models, was sufficient to compel the firms to act competitively.

David and Bunn examine the electricity supply industry in the United States in the 1880s and the development of a 'gateway' technology which allowed the Edison and Westinghouse systems to be integrated. Zajac traces the growth of the Bell Telephone Company over almost a century, and depicts the major challenge posed by three new technologies in the 1970s as a case of Schumpeterian creative destruction.

These papers are of high analytical quality and offer a variety of perspectives on technological innovation from the entrepreneurial role of the state in Latin America to some unexpected findings in a recent British survey. Contrary to some conventional wisdom, Simpson found that workers welcomed rather than resisted the introduction of microprocessor technology, that job satisfaction was not reduced, trade union resistance not encountered and massive job losses not experienced.

This collection demonstrates that the Schumpeterian vision still generates enthusiastic investigation. There is much for the business historian in these essays focusing, as many of them do, on a major facet of the productive process.

University of Aberdeen C.H. LEE

RAY LOVERIDGE and MARTYN PITT (eds.), *The Strategic Management of Technological Innovation* (Chichester: John Wiley and Sons, 1990. Pp.xiv + 404. £39.95).

Ray Loveridge and Martyn Pitt have edited a collection of 16 articles on the strategic management of technology, in which a majority of authors adopt a 'firm in sector' perspective. This is potentially an interesting and useful approach for business historians, though only a few of the chapters include a business history content. The strength of the approach is that it calls attention firstly to the effects of interaction between firms in an industry in the development of each, and secondly to the impact on particular firms of major external changes which alter the direction of an industry as a whole.

Combining these two elements in the case of technological change, it is argued firstly that firms and their sectors tend to follow natural trajectories of incremental technological change related to the characteristics of their industry, but secondly these are punctuated from time to time by radical innovations. The success or failure of particular companies can then be assessed with reference to how well the characteristics of their technological strategy fit the currently prevailing trajectory of their industry. However, in their introduction Loveridge and Pitt acknowledge that the firm-sector perspective may be incomplete. Where there is an external shock due to a major new innovation with implications for the industry, the strategies of companies shift and the groups to which they belong (through linkages which may form an 'innovation pole') are reconstituted often around different focal firms. It may therefore be necessary to supplement the analysis of a given sector with some appraisal of important external or economy-wide developments.

The book is divided into three sections. The first examines strategies in context, comparing firms within a chosen sector such as motor vehicle components. The second looks at structures, boundaries, and alliances; that is, the relationship between the evolution of the firm's own operations and its linkages with other firms (thus, the boundary of the firm's control, and its alliances with others). The third set of chapters is concerned with crisis, learning, and adaptation in the context of major changes which have affected whole industries.

Perhaps the most interesting papers to the business historian will be chapter 5 by Loveridge, which includes a brief history of Lucas and appears in the first section; and chapter 10 by Peter Clark and Chris De Bresson, which covers the history of Rover, and is the last in the second section, though it is also relevant to the issues discussed in the third. Lucas is compared with its major competitors, Bosch and Bendix. It largely adapted the generic knowledge created by others, building up its own tacit skills and organisation. The route which it chose for expansion can be understood as the incremental adaptation of its core technology. In this way the earliest characteristics of the firm and its original competitive advantage help to explain its subsequent growth path, and certain of these underlying characteristics thereby survived.

De Bresson is interested here and elsewhere in innovation poles. The impact of major external innovations on a sector is influenced by the role of such poles, or in other words by the density of inter-firm linkages in sustaining the technology of each. In the case of Rover, radical changes in the motor vehicles sector in the late 1920s led to a loss of its access to a suitable innovation pole, as strategic groups shifted. Its reorganisation in the 1930s then became dependent on one of its major suppliers of technological inputs, Lucas.

Another paper which I found interesting is chapter 8 on the decentralisation of R&D by Richard Whittington. He argues that there is now an increasing trend towards the contracting out and fragmentation of R&D by large firms. This would be the reverse of an historical trend discussed in some detail in a recent book by David Mowery and Nathan Rosenberg. To support his case, he makes the fair point that the significance of scale economies (in R&D and elsewhere) has declined, technological development is increasingly complex and interrelated, and international competion has become more intense. However, I am not entirely convinced by his argument. He says nothing of the need of large firms for in-house basic research as a means of increasing their receptivity to external technological opportunities (as discussed by Rosenberg, and Cohen and Levinthal), or the need to retain control over core technologies. He also disregards the important recent trend towards the international networking of R&D in multinational firms, part of the same process of rationalisation to which he refers, but which requires more rather than less centralised co-ordination. Perhaps Whittington has been led to his conclusion by the particular financial pressures which have confronted British firms in recent years, and whose case he focuses upon.

Overall, this is a useful book for those interested in technology strategy. Its drawback, as is typical of edited collections, is that not all of the chapters will appeal to the average reader. One expects that the business historian especially will wish to consult the book selectively. However, he or she will certainly find some chapters of interest.

University of Reading JOHN CANTWELL

CHRISTOS N. PITELIS and ROGER SUGDEN (eds.), *The Nature of the Transnational Firm* (London: Routledge 1991. Pp.xiii + 213. £12.99).

There are a variety of theoretical explanations for the existence of the multinational enterprise (MNE). The essays in this volume critically review, interpret and re-interpret the existing explanations, and some attempt new explanations. They no doubt enrich the literature on the MNE. But the long-suffering student in search of a unified theory of the MNE will find little comfort in these essays. Perhaps the one explanation which has some claim to the status of a unified theory is the eclectic theory of the MNE propounded by John Dunning. But we now have the definitive statement by the master himself, in his contribution to the volume, that the eclectic paradigm is not and has never purported to be a theory of the MNE, its focus is only on explaining the level and pattern of foreign direct investment. Dunning's disavowal, however, wears thin in the face of his spirited reply to the many critics of his paradigm. Notable in this context is his reply to the criticism that the paradigm, which places emphasis on ownership advantages possessed by prospective investors, cannot account for the observed growth in foreign investments designed to acquire advantages abroad nor can it account for conglomerate investment. Dunning dismisses the criticism with the suggestion that both these types of investment do not constitute foreign direct investment; they are in the nature of portfolio investments. This suggestion is bound to provoke controversy, but it should be of little surprise since a contribution from Dunning on the MNE is rarely without its fresh and controversial insights.

If the eclectic paradigm is not a theory, could the much-discussed transactions costs/internalisation approach to the MNE serve the purpose? While Jean François Hennart provides a lucid account of the explanation and defends its claim to be a general theory of the MNE, Neil Kay avers that it too is only a paradigm and not a theory. Both essays merit careful reading not only for the critical evaluation of the transactions costs approach but also for their explanations of the increasingly popular joint venture form of organisation of international production.

Inter-firm rivalry, collusion and the erection of barriers to entry rather than co-operation, self-denial and goodwill may be central to an explanation of observed patterns of international investment. Edward Graham's essay develops this theme in the context of industrial organisation and game theory. Although the intricate theoretical section of the essay is difficult to digest, Graham's discussion of the relevance of his theory to real-world phenomena is illuminating. Interesting in this context is his suggestion that the observed intra-industry or interpenetrating investments across borders may be explained in terms of inter-firm rivalry. The model also throws light on Japanese investment strategy in overseas markets. The theme that international operations may arise because of the desire of firms to maximise profits through the elimination of conflict may not be new. Yamin's essay in the volume traces the idea to Stephen Hymer's seminal work.

Collusion, rivalry, and divide and rule tactics figure in Sugden's approach to the existence of the multinational. One of the highlights of the essay is its thesis that the institution of the multinational serves to segment labour markets and hold down wage levels. Pitelis's wide-ranging essay emphasises the importance of demand side factors in the evolution of the multinational and also attempts a synthesis of the supply side oriented explanations. Both Sugden and Pitelis's essay with their emphasis on distributional considerations and the generally pessimistic view of the welfare implications of multinationals provide a novel and controversial perspective on the multinational enterprise. The reader who is baffled by this infinite variety of explanations, interpretations and re-interpretations would be well-advised to turn to John Cantwell's opening essay in the volume. Besides providing an expert guided tour of the various explanations, Cantwell also emphasises the much-neglected dynamic considerations in the analysis of the multinational enterprise. In sum, the editors of the volume are to be congratulated for their efforts in putting together a highly readable set of essays on a controversial theme.

University of Lancaster V N. BALASUBRAMANYAM

BOOKS RECEIVED

TERESA L AMOTT and JULIE A. MATTHAEI, *Race, Gender and Work: A Multicultural Economic History of Women in the United States* (Boston, MA: South End Press, 1991. Pp.xiii + 433. No Price).

ERRATUM

In the Books Received section of the April 1991 issue, the publisher of David Wainwright, *Government Broker: The Story of an Office and of Mullens and Co.* was given incorrectly. *Government Broker* was published by Matham Publishing of East Molesey, and the Editors would like to apologise to the author and publisher for the error.

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edited by

Gregory P. Marchildon and
Duncan McDowall

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ABSTRACTS

The Rise and Fall of a Free-Standing Company in Nova Scotia: The General Mining Association, *by Marilyn Gerriets*

The General Mining Association was a free-standing company which originated in 1826 as the result of a mercantilist granting of special privileges, but nonetheless it operated in a fashion little different from that of most mining firms during the early and mid-nineteenth century. Even its organisation as a free-standing company was common among mining companies. The firm continued as an independent corporation, although on a reduced scale, while other mining companies were created and many were subsequently absorbed in horizontal mergers during the 1880s and 1890s. In 1900 the GMA was bought by a vertically integrated steel company. The causes of the firm's lack of dynamism during most of its history cannot be determined with certainty, but attribution to its organisation as a free-standing company is hardly a tenable thesis, since rival firms which behaved far more aggressively were generally also free-standing companies.

From Branch Operation to Integrated Subsidiary: The Reorganisation of Imperial Oil under Walter Teagle, 1911–17, *by Graham D. Taylor*

This paper reviews the early history of Imperial Oil as a Canadian subsidiary of the American firm, Jersey Standard, in the context of the more recent debate in Canada over the consequences of foreign direct investment and the nature of parent–subsidiary relationships in a multinational enterprise. The paper traces the history of Imperial Oil prior to and after the Jersey Standard merger of 1899, focusing on the reorganisation of Imperial's domestic refining and distributing structure and its investment in producing fields in South America under the leadership of Walter Teagle, who later became chief executive of Jersey Standard, during the period 1911–17. The paper concludes that the impact of the Teagle era on the Jersey Standard–Imperial relationship was twofold: the Canadian company achieved a much higher degree of autonomy and vertical integration than had been the case prior to 1911; and paradoxically the interlinkages of the parent and subsidiary were reinforced.

'Hands Across the Water': Canadian Industrial Financiers in the City of London, 1905–20, *by Gregory P. Marchildon*

This article traces the emergence of Canadian industrial financiers and their links to the British capital market before the Great War. Within a few years, these individuals evolved from bond salesmen to investment bankers channelling capital from British and North American investors to Canadian industry. Between 1908 and 1912, a select group of these financiers established branches of their investment houses in the City and conducted flotations on behalf of their Canadian clients. Judging by the case of Max Aitken (later Lord Beaverbrook), Canadian financiers did so to circumvent the high fees and, at times, poor service offered by the City investment banks, and to increase their own profits. The financial depression of 1913 and the outbreak of the Great War slowed and then stopped Canadian industrial flotations in London. Thereafter, Canadian security issues were redirected to the North American capital market, particularly the United States.

Canadian Promoters and American Markets: Regulating the Irregular, 1945–55, *by Christopher Armstrong*

Canada has long depended heavily upon investment from the United States, particularly in the natural resource sector. Why, in the decade after World War II, did Canadian authorities permit the sale of large quantities of highly speculative mining and oil stocks south of the border in defiance of American law? Why run the risk of angering officials in the United States and perhaps endangering access to capital markets there? The financial community in Canada contended that the sale of speculative shares was essential to the country's speedy development, and provincial regulators claimed that they lacked the necessary powers to control promoters selling in the US. Negotiations between the two national governments to amend the Extradition Treaty so that the worst offenders could be hailed before American courts failed to provide a remedy to this situation, so that it continued to threaten the friendly relations between the two countries from time to time.

The Role of Canadian Chartered Banks in US Banking Crises: 1870–1914, *by Lawrence L. Schembri and Jennifer A. Hawkins*

This paper examines the role played by Canadian chartered banks in the banking crises that occurred in the United States during the period from 1870 to 1914. The particular hypothesis investigated is whether

Canadian chartered banks, through their US branch offices, increased their share of total US deposits during these crisis periods because they were perceived as being relatively safer than US banks. Strong empirical support is found to support the hypothesis. This finding may help to explain the large presence of Canadian chartered banks in US financial markets. The reputation for stability that these banks earned during this period undoubtedly facilitated their expansion into the US market.

Global Competitivenes and Public Policy: The Case of Canadian Multinational Banks, ***by James L. Darroch***

In the 1960s, three of the 12 largest banks in the world were Canadian. Now, none are among the largest 25. The early growth and current more focused strategies must both be understood in relation to federal public policy. Canadian multinational banks (MNBs) developed in a country dependent upon inward capital flows to develop its natural resource base. Government concerns over stability were instrumental in creating a protected market in which Canadian banks developed competitive advantages for international competition. However, globalisation altered the ability of regulators to promote both stability and global competitiveness. The complex relationships between regulation and competitiveness is analysed for six historical periods: strangled trade and the origins of Canadian MNBs, 1792–1871; new nation, new national policy and new national banks, 1871–1900; mergers and new internationalisation, 1900–34; new corporate markets in Canada and abroad, 1934–67; the new international banking: the Euromarkets, 1967–80; global competition in Canada and abroad, 1980–date.

INTRODUCTION

Canadian Multinationals and International Finance: Past and Present

GREGORY P. MARCHILDON
Johns Hopkins University

Globalisation is a term increasingly used to describe the internationally competitive environment in which a significant portion of contemporary business must operate. In the contemporary literature, globalisation is assumed to be a very recent phenomenon, perhaps one or two decades old. The history of business reminds us, however, that what we are witnessing is not so much a sharp break with the past as the continuation of a long-term trend towards larger markets that transcend political boundaries. Globalisation also denotes the international transfer of skills and technology. In Canada's case, this has been a gradual but uneven process in which technology and skills developed predominantly in Britain and, later, the United States, have been transferred, adapted and changed to suit the Canadian environment.[1] This is no longer a one-way process. Although not often recognized, technology and skills developed by Canadian firms have been transferred to other countries since the late nineteenth century, but increasingly so during the last two decades.

Multinational enterprises (MNEs), most simply defined as those business organisations that conduct their affairs in at least two countries, play a central role in globalisation. Almost all of the world's trade (inter-firm transactions) and investment (intra-firm transactions) is carried out by MNEs. The bulk of Canada's international business is conducted by only a handful of Canadian MNEs.[2] Globalisation of markets implies that the home countries of MNEs no longer provide much of a shelter from international competition. The success of Canadian MNEs will increasingly hinge upon their ability to perform outside Canada.

Globalisation also means that the investment funds needed to finance the operation and expansion of MNEs come from foreign sources. The Canadian firms that provide this finance – often MNEs in their own right – must now offer an array of traditional and new services at rates competitive with non-Canadian financial intermediaries. Obtaining capital from abroad is not a new process for Canadian enterprises but the recent deregulation of Canada's domestic financial market, in conjunction with increased capital mobility, has forced large Canadian enterprises – those supplying as well as those demanding finance – to venture even farther into the global marketplace.

The following collection of articles illustrates, through case studies, the historical significance of international finance in Canadian development and the role of the MNE in this process. The purpose of this introduction is to sketch briefly the evolution of the Canadian MNE and the role of international finance in Canadian business. Canadian MNEs in this context are the Canadian subsidiaries of foreign-owned MNEs and Canadian-owned MNEs, both of which are based in the country. The 'branch plants' – as the Canadian-based subsidiaries of foreign MNEs are known – are Canadian in the sense that they are legally incorporated as separate, although not autonomous, Canadian companies. Many branch plants, especially those given global product mandates, are MNEs because of their role in the international operations of their parent companies. For example, in 1988, the top three Canadian exporters were General Motors of Canada, the Ford Motor Co. of Canada, and Chrysler Canada. This trade was, of course, conducted on an intra-firm basis between the Canadian branch plants and the US parent companies. This would appear to stretch the definition of MNE. However, since the Auto-Pact agreement between Canada and the US in 1965, and the Canada–US Free Trade Agreement of 1988, branch plants have changed. They used to be miniature replicas of their parent companies, producing an entire range of goods and services for the tariff-protected Canadian market. Now, many form far more specialised units which produce and market a narrower range of goods for much larger markets.[3] Thus, many branch plants are becoming more international in scope even while, as has often been the case in this transformation, the 'Canadian head office is becoming a skeleton of its former self – in terms of staff numbers, professional breadth and resources, and authority'.[4]

The discussion concerning the historical evolution of Canadian MNEs is brought up to date by presenting the MNEs at work today, in and outside Canada. Many of these Canadian MNEs – in particular, the branch plants and those MNEs in the financial services sector such as the Ford Motor Co. of Canada, Imperial Oil, the Bank of Montreal, and the Royal Bank of Canada (Tables 1 and 3) – have been a prominent part of the Canadian business landscape since the late nineteenth century and early twentieth centuries. On the other hand, the list of MNEs outside these two categories (Table 2), while including old and venerable members of the Canadian business establishment (Seagrams, Labatts, Abitibi-Price and Molson), is largely comprised of either relatively new entrants (Nova, Bombardier and Magna International) or enterprises that were once foreign-owned but have since become Canadian-owned (Alcan, Inco and Northern Telecom).

Three traits continue to identify Canada: a large resource-rich land base; a relatively small population possessed of limited sources of domestic investment capital; and a close, dependent relationship with hegemonic world powers – Britain during the nineteenth and early twentieth centuries, then the United States. This has produced a porous economy in which both portfolio and direct investment has flowed in and out, albeit unevenly, over time. The bulk of this capital came first from Britain, and then from the United States. More recently, Canada has become a large capital exporter; however, a disproportionate and increasing amount of this capital is funnelled to the United States.

The first major capital inflow took the form of direct investment during the seventeenth and eighteenth centuries, by French and British enterprises exploiting the few resources such as fish and fur found in the northern fringes of the Americas.[5] These so-called 'staples' had a ready market in Europe, and the collection and sale of furs formed the business foundation of the first large enterprise that operated in Canada – the Hudson's Bay Company (HBC). Chartered in 1670, the HBC continues to operate today, although it is now a Canadian department store chain rather than a fur trade company.[6] The HBC's chief rival of the late eighteenth century and the early nineteenth century, the North West Company (NWC), was likely to have been the first Canadian-owned and operated MNE.[7] The 'Canadians', as in fact the NWC's managers and employees were called by the HBC, had their base of operations in Montreal, the heart of British North America, and a major transportation hub in aboriginal territory on the western shore of Lake Superior. The NWC also owned hundreds of sale and distribution houses (fur trade posts) throughout colonial British North America and the frozen northwest expanses of Ruperts Land. Through its facilities in London, England, the NWC sold and distributed furs in Europe.[8]

In the nineteenth century, new staples such as timber and minerals were added to the existing stock of fish and fur.[9] Marilyn Gerriets' contribution analyses the strategy and structure of the General Mining Association (GMA), a British company originally chartered in 1826 to exploit the mineral wealth of Nova Scotia While hoping to strike reserves of gold, silver and copper, the GMA found only coal. Thus, the GMA's business became coal-mining. The organisational structure of the GMA, with its legal-financial head office in Britain and a non-integrated mining operation based entirely in Canada, closely resembled the free-standing company structures described by Mira Wilkins in a recent article.[10] In 1900, the GMA was absorbed by an integrated steel company owned by Nova Scotia interests. Although they were started with substantial foreign ownership and control, the coal, iron and steel industries eventually became a base for Canadian-owned and controlled enterprises.[11]

In the half-century preceding the Great War, a substantial amount of British portfolio investment followed the earlier direct investment in resource extraction. The direct investment continued, but it was surpassed in the late nineteenth century by more passive British investment in the bonds and shares of Canadian-controlled enterprises.[12] This portfolio investment was originally directed to Canada by British financiers. Later, however, a small group of aggressive Canadian financiers would elbow their way into the lucrative London capital market to raise capital for Canadian manufacturing industry. These financiers and the manner of their entry into 'the City' from 1909 to 1912 are the subject of Gregory Marchildon's contribution. The inflow of British investment reached its peak in the decade preceding the Great War, contracted during the 1913 recession, and then collapsed in 1914 because of the restrictions imposed on the London capital market by a British government struggling to fight a war. This collapse forced Canadian business to look to the American capital market for temporary investment funds; but this source of capital proved permanent when Canadian business found Britain financially exhausted after the Great War.

By 1900, a substantial amount of American direct investment in the manufacturing and resource extraction industries had already entered Canada. Even larger amounts of American capital would enter Canada after the First World War. This investment took the form of Canadian subsidiaries tied to their American parent companies by ownership as well as by agreements permitting the transfer of the parent companies' technology to their branch plants.[13] Although branch plants such as Canadian Westinghouse, Canadian General Electric, Ford of Canada, and Imperial Oil became prominent – and in key resource and manufacturing sectors, dominant – members of the Canadian business community, business historians have devoted little attention to their evolution and historical strategies. Graham Taylor's work is a welcome exception to this inattention.[14] His paper on Imperial Oil illustrates how some of the larger branch plants evolved into integrated subsidiaries and MNEs in their own right. However, judging by the Imperial Oil case, branch plants remained subordinated to the needs and strategies of their American parent companies.

The level of American direct investment increased during the boom years of the late 1920s, stabilised in the depression and then jumped dramatically in the aftermath of the Second World War. Investment in portfolio form also began to pour into Canada from the United States after 1945. Christopher Armstrong's article explores the speculative side of the capital flow from American 'armchair' investors interested in the 'get-rich-quick' possibilities of the Canadian mining industry. Yet it was not speculation but rather the large amount of direct investment, and with it the connotation of control, that eventually attracted public attention. By the late 1950s, some Canadians were beginning to argue that political sovereignty was being threatened by the plethora of American multinationals operating in Canada. By the 1960s and early 1970s, this concern was shared by a broad spectrum of both the public and the academic community. The ensuing debate released a torrent of scholarly literature concerning the impact of the foreign MNE on Canada.[15] Three influential government reports published in 1958, 1968, and 1972, while differing in analysis and policy recommendations, accepted the premise that unregulated foreign direct investment was having a deleterious impact on the Canadian polity.[16] In 1973, the Canadian government responded to this concern by regulating the level of foreign direct investment through a screening agency called the Foreign Investment Review Agency. Two years later, the federal government created a crown corporation, Petro-Canada, that was intended to 'Canadianise' a percentage of the oil and gas industry so dominated by the branch plants.

Although concern about the impact of foreign MNEs on Canada has died down – due in part to the decrease in foreign direct investment relative to domestic direct investment since the 1960s as well as the harsh reality of economic recession in the early 1980s – branch plants remain a significant feature of the business landscape. Table 1 enumerates the 15 largest non-financial, foreign-owned Canadian MNEs. When we compare the size of these enterprises (measured by revenue, assets and the number of employees) to that of the 15 leading Canadian-owned MNEs in Table 2, we can see that foreign-owned subsidiaries continue to play a central role in Canadian economic life.

The preoccupation with the impact of inward-flowing foreign direct investment blinded many scholars to the fact that, in the years following the Second World War, Canada had become one of the world's largest exporters of direct investment. By 1971, Canada was the world's sixth largest capital exporter, led only by the United States, Britain, France, West Germany and Switzerland.[17] Canadian-owned MNEs were centrally involved in this direct investment, and, after years of neglect,

TABLE 1

15 LARGEST NON-FINANCIAL FOREIGN-OWNED CANADIAN MULTINATIONAL ENTERPRISES (MNEs)

Foreign-owned Canadian MNE	Country	Foreign ownership (Per cent)	Revenue 1990 Cdn. $ (millions)	Assets 1990 Cdn. $ (millions)	Employees 1990 (No.)
General Motors of Canada	US	100	18,458	5,961	42,555
Ford Motor of Canada	US	94	13,706	3,564	28,000
Imperial Oil	US	70	10,223	15,196	14,702
Chrysler Canada	US	100	7,067	2,845	14,000
Shell Canada	Netherlands	78	5,508	6,163	7,136
IBM Canada	US	100	4,578	3,170	12,711
Sears Canada	US	61	4,571	3,194	48,000
Amoco Canada Petroleum	US	100	4,444	6,316	4,200
Canada Safeway	US	100	4,318	972	29,000
Total Petroleum (N A.)	France	52	3,180	1,453	6,966
Canada Packers	Britain	56	3,092	781	9,000
Mitsui & Co. (Canada)	Japan	100	2,729	294	123
United Westburne	France	69	2,564	1,193	7,100
Honda Canada	Japan/US	100	2,454	n/a	2,000
F.W. Woolworth	US	100	2,322	874	27,000

Source: *The Financial Post 500*, Summer 1991, pp. 94–5, 136.

business historians have finally begun to study the evolution of these enterprises.[18]

Historically, the first significant capital outflow from Canada can be traced to the earlier precedent of Canadian utility enterprises in Latin America and the Caribbean. These companies, with their legal head offices in Canada and their operational headquarters in the host country, were promoted mainly by Canadian financiers who retained managerial control. They were built using investment capital raised mainly in Britain, France, and Belgium in the 15 years before the Great War. The utility firms had a chequered career, however, and some of them, such as the Mexican Light & Power Co., survived little more than a decade. The most successful of the group, Brazilian Traction, Light & Power, was eventually nationalised by the Brazilian government.[19]

Today, three characteristics define the Canadian-owned, non-financial MNEs listed in Table 2: their high degree of 'multinationality'; the overwhelming importance of their American subsidiaries; and the concentration of resource-based companies. The high degree of multinationality is reflected in the ratio of foreign sales to total sales and in the ratio of foreign assets to total assets, shown in Table 2. Canadian MNEs such as Alcan, Northern Telecom, Seagrams, Varity, Inco and Moore sell more than 50 per cent of their total products abroad and hold in excess of one-half of their assets in foreign countries.

The United States is, by an enormous margin, the most important host country for Canadian MNEs. In addition, the centrality of the US market for Canadian MNEs is increasing rather than decreasing over time. At present, over 70 per cent of all Canadian-owned foreign direct investment is in the United States. Keeping in mind that the US economy is more than ten times the size of the Canadian economy, it is remarkable that Canadian direct and portfolio investment grew from almost 20 per cent of the corresponding value of US investment in Canada in 1975 to almost 60 per cent by 1986. Given this rate of increase, it is possible that the level of Canadian direct investment in the United States will equal the US level of direct investment in the Canadian economy by the late 1990s.[20]

Six of the 15 largest Canadian MNEs can be classified as resource companies – mineral mining, oil and gas exploration and drilling, and forest products. The size of firms such as Alcan, Noranda and Nova attests to substantial Canadian involvement in the resource industries. However, foreign-owned and controlled resource companies also play a substantial and sometimes dominant role within certain sectors, such as oil and gas. The dynamism of new high technology and heavy manufacturing MNEs suggests, however, that the future business of Canadian MNEs will not be as resource-dominated as in the past. Moreover, Canadian property development enterprises such as Olympia & York owned by the Reichman family of Toronto – although not included in Table 2 because they are private companies – reflect the diversity of the Canadian-owned MNE portfolio.[21]

Table 2 also illustrates the fact that Canadians have moved outside the traditional resource industries into heavy manufacturing and high technology. The largest non-resource Canadian MNEs include: Northern Telecom (telecommunications products); Moore Corporation (business communications products); Bombardier (mass transit products, rail and diesel products, recreational and utility vehicles and aerospace products); Magna International (automotive parts); and Ivaco (steel and steel products).[22] Also conspicuous on the international scene are privately-held Canadian-owned MNEs such as the engineering consulting firm of Lavalin (now SNC-Lavalin) and the shoe manufacturer Bata. The nature of their ownership as of 1990 precluded public

TABLE 2

15 LEADING NON-FINANCIAL CANADIAN-OWNED MULTINATIONAL ENTERPRISES (MNEs)

Canadian MNE	Major Business	Revenue 1990 Cdn.$ (millions)	Average Revenue 1981–86 Cdn.$ (millions)	Assets 1990 Cdn.$ (millions)	Employees 1990 (No.)	Foreign Sales 1982–86 (Per cent)	Foreign Assets 1982–86 (Per cent)
Alcan Aluminium Ltd.	minerals	10,217	7,126	12,352	57,000	82	62
Noranda Inc.	forest products	9,565	3,269	14,917	56,000	65	27
Northern Telecom *	high technology	7,899	4,526	7,936	n/a	65	71
Seagram Co.	distilleries	5,865	3,817	13,340	17,000	94	91
Nova Corp. of Alberta	oil and gas	4,737	3,429	7,015	4,736	19	10
John Labatt Ltd.	breweries	4,681	3,062	2,946	16,500	20	28
Varity Corp	manufacturing	4,155	2,012	3,453	19,000	93	86
Inco Ltd.	minerals	3,626	1,801	4,707	19,387	84	55
Moore Corp.	high technology	3,231	2,572	2,512	25,021	90	91
Abitibi-Price Inc.	forest products	3,088	2,149	2,476	14,300	64	12
Domtar Inc.	forest products	2,314	2,002	2,824	13,000	31	13
Molson	breweries	2,122	1,939	1,842	13,900	29	26
Bombardier Inc.	manufacturing	2,094	664	1,527	22,500	74	32
Magna International	manufacturing	1,927	389	1,755	16,000	79	12
Ivaco Inc.	manufacturing	1,900	1,184	1,412	9,455	79	30

Notes: Enterprises not identified by A.M. Rugman and M. Warner as Canadian MNEs were excluded from the above list. Foreign sales are calculated as a per cent of the enterprise's total sales. Similarly, foreign assets are calculated as a per cent of the enterprise's total assets.

* Northern Telecom is now a legal subsidiary of a Canadian-owned conglomerate, BCE Inc.

Sources: *The Financial Post 500*, Summer 1991, pp. 94–5; A.M. Rugman and M. Warner, 'Strategies for the Canadian Multinationals', in A.M. Rugman (ed.), *International Business in Canada Strategies for Management* (Scarborough, Ont., 1989), pp. 202–4.

reporting and therefore they are not included in Table 2. In addition, some Canadian conglomerates whose operations are too diverse to catergorise are not included in Table 2; for example, Canadian Pacific (which now owns petroleum interests in Texas, textiles in North Carolina, forest products in Washington state, ships in Bermuda as well as hotels, real estate and trucking operations throughout North America) and the Weston group (which owns pulp and paper operations, fish packing plants, bakeries, and grocery store chains both in Canada and abroad).[23]

Financial services, unlike the resources and manufacturing industries, have traditionally been the preserve of Canadian-owned companies.[24] This remains the case today. Almost all of the financial enterprises listed in Table 3 are entirely Canadian-owned and controlled. The only exceptions are the Hong Kong Bank of Canada, a fully-owned subsidiary of the Hongkong & Shanghai Banking Corporation of Hong Kong, and the Laurentian Group Corporation (which includes the Laurentian Bank of Canada), 15 per cent of which is owned by the Groupe Victoire of France. In addition, over two-thirds of the top 15 financial enterprises have international operations. Financial enterprises such as the Confédération des caisses populaires Desjardins or the Caisse de dépôt et de placement du Québec, however, have a domestic mandate and thus are not likely to become MNEs in the future; the former is a credit union wholly owned and controlled by its members in Québec, and the latter is a provincial crown corporation that invests savings, obtained mainly from public sector pension plan schemes, in Québec enterprises.[25] As Duncan McDowall points out in the concluding essay, the Caisse de dépôt reflects Québec's 'distinct' marketplace and the corporatist role of the Québec government in fostering indigenous Québecois business.[26]

Some of the enterprises listed in Table 3, most notably the chartered banks, were the first Canadian MNEs and they remain among the largest MNEs. This is the product of the historical necessity of Canadian firms to reach outside of Canada for capital. For example, the first Canadian enterprises to require substantial finance from abroad were the Canadian railway companies, in particular the Canadian Pacific Railway (CPR). Created shortly after Canadian Confederation in 1867, and heavily supported and subsidised by the new Canadian government, the CPR was intended to weld the disparate and distant regions of Canada into a nation-state with economic lines running east and west.[27] But the CPR needed far more capital than was available in Canada. From the beginning, therefore, the CPR financed itself by selling shares and bonds through the London capital market. The huge share issues were sponsored first by the English merchant banks and subsequently by the London branch of the Bank of Montreal, the most powerful financial institution in Canada prior to the Great War.[28]

The Bank of Montreal was multinational in scope from its creation in 1817. Its history illustrates many of the unique characteristics of the Canadian multinational, including the borrowing of the very best in organisational and financial methods that developed in the innovative and experimental environment south of the Canadian border, while scrupulously avoiding the poorer structures and methods.[29] The Bank of Montreal was chartered by a group of Montreal merchants intent on implementing the banking ideas of Alexander Hamilton who, in turn, had looked to the original charter of the Bank of England as his model of centralised banking.[30] The founders were ambitious men. They wanted the Bank of Montreal to become not only the bankers' bank of Canada, but also a MNE with profitable links to the United States and Europe. In 1818, the Bank of Montreal opened an agency in New York City and in 1870, the Bank established a branch in the financial centre of the world, the City of London.[31]

While pre-eminent during the nineteenth century, the Bank of Montreal later began to slip relative to some of its Canadian competitors. By 1920, the Royal Bank of Canada had established numerous foreign branches in the Caribbean and Latin America, as well as a base in Europe through its London office. The Bank of Nova Scotia had also moved into the Caribbean by this time and, along with the Royal Bank, provided commercial banking services that facilitated trade between the United States and the Caribbean region. Indeed, these Canadian banks 'were pioneers in the combination of domestic retail operations with international branch banking and the finance of trade between foreign countries'.[32]

Through its aggressive policy of acquisitions in Canada and expansion overseas, the Royal Bank of Canada surpassed the Bank of Montreal in asset size by 1920. In the decades that followed, the more dynamic chartered banks, along with a rejuvenated Bank of Montreal, emulated the Royal Bank's policy of acquisition, and by 1960, they had consolidated down into the 'big five' chartered banks: the Royal Bank of Canada, the Canadian Imperial Bank of Commerce, the Bank of Montreal, the Bank of Nova Scotia, and the Toronto-Dominion Bank. As Table 3 indicates, these chartered banks are the five largest financial institutions in Canada; they are also among the largest MNEs operating out of a Canadian base.

Not surprisingly, business historians have devoted much more time to the banks than to non-financial Canadian MNEs. The quality of this work varies considerably, however, and thus far analysis of the MNE character of the banks has been limited.[33] James Darroch's essay redresses this deficiency to some extent by providing a broad survey of the multinational strategies of the Canadian chartered banks over the historical long run. Darroch explains how public policy, exerted mainly through the Canadian government's unique decennial remodelling of its Bank Act, encouraged the development of a few large banks that became competitive on the international stage within a relatively short period of time. And although the world position of the 'big five' chartered banks has declined relative to the large Japanese MNE banks, the Canadian MNE banks have continued to perform well against the US banks. Having rolled with the punches delivered by the radical financial changes of the 1970s and 1980s, some of the Canadian chartered banks have also recently acquired major Canadian investment houses and are now expanding into the investment banking and securities business.

Lawrence Schembri and Jane Hawkins propose the hypothesis that the Canadian chartered banks have historically done well in the United States because they were perceived as safer than the smaller, non-branch American banks, particularly during the periodic financial crises that were a feature of the American economy before 1914. Schembri and Hawkins' test results indicate that, as a consequence of their extensive branch system, Canadian banks enjoyed a competitive advantage in the United States. The large Canadian chartered banks continue to profit from the continuing instability of American banks during the twentieth century. As Darroch points out, however, the Canadian banks do not benefit from any similar advantage in modern-day Europe or Japan and, in relative terms, have slipped in competitive position in last few decades.

In the past, the Canadian chartered banks benefited from the peculiar nature of the Canadian institutional environment, which, at least from their point of view, provided an optimal mix of *laissez-faire* and government regulation.[34] The regulatory environment encouraged banking within a relatively protected and high-profit domestic market, and provided the basis for vigorous expansion outside of Canada. For Canadian investment bankers and stock promoters in Britain before the First World War, or in the United States after the Second World War, it provided a virtually unregulated Canadian base from which to enter into the more regulated American and British securities markets to draw capital. The contemporary globalisation of capital markets has removed most of this advantage, however, and Canadian financial intermediaries must now discover new strategies in order to compete effectively at home and abroad.

NOTES

The author would like to thank Geoffrey Jones, Duncan McDowall, Alan Rugman and Graham Taylor for their very helpful comments concerning this introduction to the special edition.

1. See B. Sinclair, 'Canadian Technology: British Traditions and American Influence', *Technology and Culture*, Vol. 20 (1979), and P.J. Wylie, 'Technological Adaptation in Canadian Manufacturing, 1900-1929', *Journal of Economic History*, Vol. 49 (1989).
2. A.M. Rugman, one of the leading Canadian scholars of MNEs, suggested that 70 per cent of Canadian trade with the United States is conducted by 50 Canadian MNEs: Paper presented at the Business History Workshop, University of Western Ontario, London, Canada, 31 May 1991. Two Canadian scholars recently suggested that 300 financial and industrial MNEs dominate world trade and investment. See D. Drache and M S. Gertler (eds.), *The New Era of Global Competition: State Policy and Market Power* (Montreal, 1991), p. xv.
3. See I.A. Litvak, 'US Multinationals: Repositioning the Canadian Subsidiary', *Business in the Contemporary World*, Vol. 3 (1990), pp. 114–17.
4. Ibid., p. 117.
5. H.A. Innis, *The Cod Fisheries: The History of an International Economy* (Toronto, 1940); J. Gilchrist, 'Exploration and Enterprise in the Newfoundland Fishery, c. 1497–1677', in D.S. Macmillan (ed.), *Canadian Business History: Selected Studies. 1497–1971* (Toronto, 1971); H.P. Biggar, *The Early Trading Companies of New France* (Toronto, 1901); D. Miquelon, *Dugard of Rouen: French Trade to Canada and the West Indies. 1729–1770* (Montreal, 1978), and 'Havy & Lefebvre of Quebec: A Case Study of Metropolitan Participation in Canadian Trade', *Canadian Historical Review*, Vol. 56 (1975).
6. In 1991, the HBC sold off the last of its dwindling fur trade operations.
7. In '"Giants of an Earlier Capitalism": The Chartered Trading Companies as Modern Multinationals', *Business History Review*, Vol. 62 (1988), A.M. Carlos and S. Nicholas argue that the HBC, along with the other great chartered trading companies of the seventeenth and eighteenth centuries, were MNEs.
8. E.E. Rich, *Hudson's Bay Company*, 3 vols. (Toronto, 1960); W.S. Wallace, *The Pedlars From Quebec* (Toronto, 1954); H.A. Innis, *The Fur Trade in Canada* (Toronto, rev. ed. 1956); M.W. Campbell, *The North West Company* (Toronto, 1957).
9. For the colonial timber business, see A.R.M. Lower, *Great Britain's Woodyard: British America and the Timber Trade. 1763–1867* (Montreal, 1973); G. Wynn, *Timber Colony: A Historical Geography of Early Nineteenth Century New Brunswick* (Toronto, 1981); L. Dechêne, 'Les enterprises de William Price, 1810–1850', *Histoire Sociale/Social History*, Vol. 1 (1968); G. Gaudreau, 'L'exploitation des Forêts Publiques au Québec (1874–1905): Transition et Nouvel Essor', *Revue d'Histoire de l'Amerique Française*, Vol. 42 (1988). Mineral mining has received less attention. D.M. LeBourdais, *Metals and Men: The Story of Canadian Mining* (Toronto, 1957) provides an historical summary and A. Dow's 'Finance and Foreign Control in Canadian Base Metal Mining', *Economic History Review*, Vol. 37 (1984) provides the same for the first half of the twentieth century.
10. M. Wilkins, 'The Free-standing Company, 1870–1914: An Important Type of British Foreign Direct Investment', *Economic History Review*, Vol. 41 (1988).
11. D. McDowall, *Steel at the Sault: Francis H. Clergue, Sir James Dunn, and the Algoma Steel Corporation, 1901–1956* (Toronto, 1984); W. Kilbourn, *The Elements Combined: A History of the Steel Company of Canada* (Toronto, 1960); K. Inwood, 'Local Control, Resources and the Nova Scotia Steel and Coal Company', Canadian Historical Association, *Historical Papers* (1986); D. Macgillivray, 'Henry Melville Whitney Comes to Cape Breton: The Saga of a Gilded Age Entrepreneur', *Acadiensis*, Vol. 9 (1979); D. Frank, 'The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation', *Acadiensis*, Vol. 7 (1977).

12. D.G. Paterson, *British Direct Investment in Canada* (Toronto, 1976); M. Simon, 'New British Investment in Canada, 1865–1914', *Canadian Journal of Economics*, Vol. 3 (1970).
13. See H.G.J. Aitken, *American Capital and Canadian Resources* (Cambridge, MA, 1961); A.R.M. Lower, *The North American Assault on the Canadian Forest: A History of the Lumber Trade between Canada and the United States* (Toronto, 1938), O.D. Main, *The Canadian Nickel Industry: A Study in Market Control and Public Policy* (Toronto, 1955): H. Marshall et al., *Canadian-American Industry: A Study in International Investment* (Toronto, 1976, first published in 1936), M.M. Mendels, *The Asbestos Industry of Canada* (Montreal, 1930)
14. See his: 'Management Relations in a Multinational Enterprise: The Case of Canadian Industries Limited, 1928–1948', *Business History Review*, Vol. 55 (1981); 'Sun Oil Company and Great Canadian Oil Sands Ltd.: The Financing and Management of a "Pioneer" Enterprise, 1962–1974', *Journal of Canadian Studies*, Vol. 20 (1985); 'Charles F. Sise, Bell Canada, and the Americans. A Study of Managerial Autonomy, 1880–1905', in D. McCalla (ed.), *The Development of Canadian Capitalism: Essays in Business History* (Toronto, 1990); 'A Merchant of Death in the Peaceable Kingdom. Canadian Vickers, 1911–1927', in P. Baskerville (ed.), *Canadian Papers in Business History*, Vol. 1 (Victoria, BC, 1990).
15. Some of the more influential work with an historical dimension during this period includes: W. Clement, *Continental Corporate Power. Economic Elite Linkages between Canada and the United States* (Toronto, 1976); D.G. Creighton, *The Forked Road: Canada 1939–1957* (Toronto, 1976); K. Levitt, *Silent Surrender: The Multinational Corporation in Canada* (Toronto, 1970); I. Lumsden (ed.), *Close the 49th Parallel Etc.: The Americanization of Canada* (Toronto, 1970); R.T. Naylor, *The History of Canadian Business, 1867–1914*, 2 vols. (Toronto, 1975); A.E. Safarian, *Foreign Ownership of Canadian Industry* (Toronto, 1966); G. Williams, *Not for Export: Towards a Political Economy of Canada's Arrested Industrialization* (Toronto, 1983).
16. Government of Canada, *Royal Commission on Canada's Economic Prospects: Final Report* [*The Gordon Report*] (Ottawa, 1958); Government of Canada, *Foreign Ownership and the Structure of Canadian Industry: Report of the Task Force on the Structure of Canadian Industry* [*The Watkins Report*] (Ottawa, 1968); Government of Canada, *Foreign Direct Investment in Canada* [*The Gray Report*] (Ottawa, 1972).
17. J. Niosi, *Canadian Multinationals* (Toronto, 1985), p. 7.
18. The subject was briefly reviewed in G. Marchildon, 'A New View of Canadian Business History', *Business History*, Vol. 32 (1990). E.P. Neufeld's *A Global Corporation: A History of the International Development of Massey-Ferguson Limited* (Toronto, 1969) is one of the few works that concentrates on the MNE aspect of a Canadian industrial company. Incredibly, Niosi's *Canadian Multinationals* and A.M. Rugman and J. McIlveen, *Megafirms: Strategies for Canada's Multinationals* (Toronto, 1985) were among the first scholarly works to focus entirely on Canadian MNEs.
19. See D. McDowall, *The Light: Brazilian Traction, Light and Power Company Limited 1899–1945* (Toronto, 1988); C. Armstrong and H.V. Nelles, *Southern Exposure: Canadian Promoters in Latin America and the Caribbean, 1896–1930* (Toronto, 1988); G.P. Marchildon, 'International Corporate Law from a Maritime Base: The Halifax Firm of Harris, Henry, and Cahan', in C. Wilton (ed.), *Beyond the Law: Lawyers and Business in Canada 1830 to 1930* (Toronto, 1990).
20. A.M. Rugman and M. Warner, 'Strategies for the Canadian Multinationals', in A.M. Rugman (ed.), *International Business in Canada: Strategies for Management* (Scarborough, Ontario, 1989); A.M. Rugman and A. Verbeke, 'Canadian Business in a Global Trading Environment', in A.M. Rugman (ed.), *International Business Research for the Twenty-first Century: Canada's New Research Agenda*, Vol 1, Research in Global Strategic Management (Greenwich, CT, 1990); A.M Rugman, *Multinationals and Canada-United States Free Trade* (Columbia, SC, 1990), pp. 12–13

21. See J. Lorimer, *The Developers* (Toronto, 1978), and P. Foster, *The Master Builders: How the Reichmans Reached for an Empire* (Toronto, 1986).
22. A.M. Rugman and and M. Warner, 'Strategies for the Canadian Multinationals', in A.M. Rugman (ed.), *International Business in Canada: Strategies for Management* (Scarborough, Ont., 1989), pp. 219–22.
23. 1990 Annual Reports of Canadian Pacific Ltd. and George Weston Ltd.
24. E.P. Neufeld, *The Financial System of Canada: Its Growth and Development* (Toronto, 1972).
25. R. Rudin, 'Class and Cooperatives: The Struggle for Control within the Caisses Populaires of Quebec, 1900–1945', in P. Baskerville (ed.), *Canadian Papers in Business History*, Vol. 1 (1990).
26. J.E. Pesando, 'An Economic Analysis of Government Investment Corporations, with Attention to the Caisse de Dépôt et Placement du Québec and the Alberta Heritage Fund', Economic Council of Canada, Discussion Paper No. 277, March 1985.
27. W.K. Lamb, *History of the Canadian Pacific Railway* (New York, 1977); H.A. Dempsey (ed.), *The CPR West: The Iron Road and the Making of a Nation* (Vancouver, 1984).
28. R.C. Michie, 'The Canadian Securities Market, 1850–1914', *Business History Review*, Vol. 62 (1988); G.P. Marchildon, 'British Investment Banking and Industrial Decline before the Great War: A Case Study of Capital Outflow to Canadian Industry', *Business History*, Vol. 33 (1991), pp. 75–6.
29. M. Denison, *Canada's First Bank: A History of the Bank of Montreal*, 2 vols. (Toronto, 1966/67).
30. B. Hammond, *Banks and Politics in America: From the Revolution to the Civil War* (Princeton, NJ, 1957), p. 1.
31. Denison, *Bank of Montreal*, Vol. II, p. 171.
32. N.C. Quigley, 'The Bank of Nova Scotia in the Caribbean, 1889–1940', *Business History Review*, Vol. 63 (1989), p. 837. Also see M. Kaufman, 'The Internationalization of Canadian Bank Capital (With a Look at Bank Activity in the Caribbean and Central America)', *Journal of Canadian Studies*, Vol. 19 (Winter 1984/85).
33. Denison, *Bank of Montreal*; V. Ross and A. Trigge, *A History of the Canadian Bank of Commerce*, 3 vols. (Toronto, 1920–34); Bank of Nova Scotia, *The Scotiabank Story: A History of the Bank of Nova Scotia, 1832–1982* (Toronto, 1982); J. Schull, *100 Years of Banking in Canada: A History of the Toronto-Dominion Bank* (Toronto, 1958); The history of the Royal Bank of Canada is presently being written by D. McDowall. For a rival bank's early history and expansion beyond the Maritime provinces and Canada, see J.D. Frost, 'The "Nationalization" of the Bank of Nova Scotia, 1880–1910', *Acadiensis*, Vol. 12 (1982).
34. I am indebted to Geoffrey Jones for this suggestion.

The Rise and Fall of a Free-Standing Company in Nova Scotia: The General Mining Association

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The evolution of the organisational structure of the firm in general, and the multinational enterprise in particular, has received considerable attention in recent years. The literature on the subject first noted the significance of the American multinational enterprise in the international economy of the 1950s and 1960s, but research soon indicated both that other nations had multinational enterprises and that the multinational enterprise had been of considerable importance from the 1870s.[1] Exploration of nineteenth-century foreign investment patterns reveals that the British did not restrict their investment to portfolios of stocks and bonds but engaged in considerable direct investment. However, British direct investment often occurred through free-standing companies, that is firms with a board of directors in one country and operations in another.[2] As a result, foreign direct investment was controlled by British boards of directors without the mediation of the management hierarchy of a complex multinational enterprise.

The motivations for undertaking any foreign investment are varied. The most fundamental reason, allocation of capital from a capital rich nation where the return is low to a capital poor nation where the return is high does not necessarily require direct investment. Moreover, foreign investment may occur for reasons other than the transfer of capital; greater efficiencies of organising production through firms rather than through markets may encourage the investment. Two important patterns in which foreign investment occurs through the firm have been described. In the first pattern, manufacturing firms initially find that establishing a sales office in a foreign market improves performance and subsequently determine that production can be conducted profitably in the new location. The second pattern is one of backward integration, as a firm's search for a secure supply of raw materials takes it to sources in foreign rather than domestic markets.[3]

Both these patterns of expansion require the use of the multiunit corporation, but operating a business with a number of units in different locations required sophisticated transportation and communication systems. The techniques of organising and managing such enterprises had to be learned incrementally, generally through practice. As a result, the multiunit corporation was a growth of the post-1870 period and it was not available as a vehicle for direct foreign investment until the late nineteenth century.[4]

Before the multiunit corporation became common, a free-standing company was the only available institutional choice for direct control by people in one nation of industrial investments in another nation. Thousands of such firms were formed in Britain.[5] The motives for direct investment still need explanation; certainly foreign investment could not have resulted from the normal expansion of the activities of existing firms at a time when firms lacked the capacity to expand through the creation of new units. In addition, their mode of operation and the degree of success they achieved need to be determined if the history of foreign direct investment is to be fully understood.

The General Mining Association (GMA), formed in 1825, provides an early example of a British free-standing company in Canada; in fact, it is the oldest British direct investment in Canadian industry which survived to the last quarter of the nineteenth century.[6] The Hudson Bay Company preceded the GMA, of course, but it was a commercial, rather than industrial, company. Other companies formed by the British to operate in Canada in the second quarter of the nineteenth century, that is the Canada Company and the British American Land Co. and various financial concerns, were also not industrial in nature. The Vancouver Island Coal Mining & Land Co. Ltd., formed in 1862, was the next oldest British direct investment in industry which survived.[7]

While the history of the GMA is interesting simply as an example of early external investment in Canada, it is also worth examining for the light which its study can shed on the institutions of foreign direct investment. Not only was it a free-standing company, but its history also provides an example of the evolution of the corporation during the nineteenth century. The purpose of this paper is to outline the organisational structure and describe the range of operations of the GMA in order to explore the creation, operation and demise of this free-standing company as the corporate form evolved in Nova Scotia.[8] It will be seen that the GMA originated in a thoroughly mercantilist granting of special privileges comparable in form to the creation of the Hudson Bay Company; indeed the firm received a royal charter from Queen Victoria in 1846.[9] Nevertheless it operated in a fashion little different from that of most mining firms during the early and mid-nineteenth century, and even its organisation as a free-standing company was common among mining companies of substantial size in the province. It continued as an independent corporation, although on a reduced scale, while other mining companies were created and many were subsequently absorbed in horizontal mergers during the 1880s and 1890s. Finally, in 1900 the GMA was bought by the locally owned and vertically integrated Nova Scotia Steel Co. The firm's passivity during the merger movement may have stemmed from the great distance of its board of directors from its field of operations, may have been peculiar to the temperament and resources of the owners, or may have resulted from a reasonable assessment of the profitability of proposed ventures. In assessing the success of this firm, it should be remembered that the exceptional firms normally took the lead in the merger movements; the typical fate of a firm was to be absorbed by others.

I

The first issue which needs to be addressed is the reason why this free-standing company, the General Mining Association, was created at all. It has been argued that successful entrepreneurs must perceive, evaluate and appropriate opportunities, and by these criteria the founders of the GMA proved themselves quite successful.[10] As a result, to continue to use the terminology developed to study the transnational firm, the GMA gained control of an ownership advantage denied to indigenous entrepreneurs, a 60-year lease of the rights to a wide range of minerals in Nova Scotia.[11] However, its advantage over local entrepreneurs lay in its association with the Royal Family, not in superior skill or even access to capital. Local capital and local entrepreneurs were available in Nova Scotia in the 1820s and sought access to coal reserves, but access was denied to them even when they offered more favourable terms than those granted to the GMA.[12] In this case, the immediate explanation for foreign control is political, rather than strictly economic.

The circumstances which led to the creation of the GMA began in 1788, when King George III had a draft lease of a wide range of minerals rights (but not coal) in Nova Scotia drawn up in favour of his son, the Duke of York; at the same time, restrictions on the mineral rights conveyed with grants of land in the province were increased.[13] The lease to the Duke was left as a draft and was not pursued further, perhaps because the mineral resources of the province seemed unpromising. By 1826 the Duke of York had acquired a significant debt with his jeweller, the firm of Rundell Bridge Bigge and Rundell. The firm, in seeking to collect this debt, perceived an opportunity in the draft lease in favour of the Duke. It evaluated the opportunity by hiring a man with sufficient expertise to travel to Nova Scotia and determine what minerals were valuable. To its disappointment, copper was not found as expected, but the value of the coal in the province was duly noted. A final lease was drawn up, with coal added to what was a considerable list of minerals. The firm's initiative resulted in the Duke possessing a 60-year lease of all the ungranted and unopened:

> mines of gold and silver, coal, iron, stone, lime-stone, slate-stone, slate-rock, tin, copper, lead and all other mines, minerals and ores and all beds and seams of gold, silver, coal, iron, stone, lime-stone, slate-stone, slate-rock, tin, clay, copper, lead and ores of every kind and description belonging to his Majesty within the Province of Nova Scotia.[14]

When this lease to the Duke was finalised, the firm obtained a sublease from the Duke which entitled him to 25 per cent of all profits.[15] The General Mining Association was formed in order to exploit the mineral rights made available through the lease. Although Nova Scotia had not included Cape Breton in 1788 when the King had expressed his intention to transfer Nova Scotia's mineral rights to his son, and previously opened mines were excluded from the Duke's lease, by 1828 the GMA had managed to secure rights both to the previously opened mines and to unopened coal deposits in the entire province. The term of the lease was longer and the royalty payments far lower than for any previously granted lease of coal. The firm had excellent reason to believe that the ownership advantage it had secured was of great value. In 1826 most North American supplies of coal were completely inaccessible to markets. The vast soft coal resources of the United States are west of the Appalachian mountains, so that transport to coastal cities was impractical until the completion of railroads to the west in the 1850s. The anthracite of Eastern Pennsylvania suffered from high transportation costs as well as from great technical difficulties in its use until the very end of that decade.[16] As a result, the small but growing American markets were supplied with coal from small, mediocre deposits along the James River in Virginia which could be brought to tidewater relatively cheaply and with coal imported from Britain – and that coal was subject to an eleven shilling a chaldron export duty.[17] Indeed, in 1826 in all of North America only Nova Scotia possessed large deposits of coal which could be economically exported to coastal cities, so the GMA possessed a considerable locational advantage over British exporters of coal or current American producers. The most effective competition in British North America was provided by returning timber ships which brought in British coal at nominal freight rates in place of ballast, but the importance of these supplies was largely confined to timber ports.

Unfortunately for the investors, the value of their asset fell considerably when market conditions changed dramatically soon after the formation of the company. Techniques of burning anthracite were developed and the relative purity and intense heat of that fuel guaranteed large markets in the United States. Anthracite deposits were east of the Appalachians near the Schuylkill River which passes through Philadelphia and near tributaries to the Delaware River, so that transportation was soon improved. By the early 1830s coal prices had fallen greatly; the New York price of coal in the autumn when coal markets were most active fell from the range of $8.00–12.00 per ton during the 1820s to $5.00–10.00 during the 1830s and to $4.50–6.00 in the depressed 1840s.[18] Removal of the 11 shilling per chaldron export duty on British coal also had a depressing effect on the American price.[19]

The firm did not retain its exclusive lease for the full 60 years of its term. Initially, in the late 1820s and 1830s the GMA received a warm welcome from the provincial government and from the population in general, as they credited the company with creating major expansion in this industry. However, after democratisation of the provincial government, and particularly after the firm requested a reduction in royalties during the economically difficult 1840s, both the government and the public perceived that the privileges granted to the firm reduced potential income from the industry.[20] Finally, in 1858, negotiations between agents of the provincial government and the firm resulted in the GMA relinquishing its mineral rights, except for quite significant properties which included the existing mines, in return for a substantial reduction in the royalty paid. The province instituted measures to allow members of the public to obtain leases to search for minerals and to work mines on terms equivalent to those of the GMA. Investment in new mines was undertaken immediately, and the General Mining Association soon became just one of many coal mining companies in the province.[21]

II

Once the firm of Rundell Bridge Bigge and Rundell had obtained the sublease of the minerals of Nova Scotia in 1826, the ability of indigenous entrepreneurs to develop the minerals was constrained. However, the British firm did have alternatives to direct operation of the mines which might still have permitted it to benefit from its newly won property; a free-standing company was still not inevitable. Rather than attempt to control production directly over a great distance, the firm could have sold its lease, sublet the mineral rights or contracted out the exploitation of the minerals.[22] Subleasing by the firm also might be expected due to the wide range of minerals which the firm controlled; one group of investors could be expected to have considerable difficulty finding the capital and expertise to invest so widely. Nonetheless, the firm showed very little interest in leasing out its mineral rights, and demonstrated a preference to work minerals under direct control or not at all.

The records of the board of directors which might have contained discussions of the advantages and disadvantages of leasing have not survived, but the firm's attitude towards leasing the mines is revealed in correspondence.[23] In the 1870s, when the Nova Scotia coal industry was seriously depressed due to loss of the American market, the firm was reducing operations sharply. The output of the Lingan mine in Cape Breton was to be cut by half and the management was to be added to the duties of R.H. Brown Jr., the manager of the nearby Sydney Mines. The manager of Lingan, Routledge, was given notice. Rather than be dismissed, however, Routledge offered to lease the mine or to work the coal on contract. He suggested that arrangements should be on a year-to-year basis, so that direct operation could be resumed by the firm whenever market conditions improved and the profitability of the mine would increase. R.H. Brown Jr. was both willing and quite competent to inspect the mine on a regular basis and ensure that it was not worked in a manner which would injure the firm.[24] However, the board's response to the suggestion to lease was quite negative.[25] Clearly the board felt that if the terms of the lease or contract yielded more profit to the firm than direct operations with Routledge as manager then either Routledge would be unable to live up to the terms of the contracts that he offered, or else he had not been giving them good service as a salaried manager. In either case, they were reluctant to accede to his request to be allowed to continue to work the mine, and preferred to continue to control the mine directly through the management of R.H. Brown Jr. who took it on in addition to his responsibilities at Sydney.[26]

This discussion of the alternative of leasing the mine took place after the firm had been in operation for more than four decades, but it indicates that the board believed at that time that mineral deposits could not be worked at a greater return to themselves by a lease holder who earned the profits or suffered the losses than by salaried employees, and that its interests were best served by direct operations. Presumably the firm was of the same opinion when it began work in 1826 through direct operation by salaried managers, and experience had not altered its views. Indeed the reality appears to have been that operation by salaried managers was as efficient as operations by a lease holder.

Quite aside from the efficiency of operations, leasing may have had limited benefits in terms of reducing the risks of investment in mining. If market conditions were bad, lessees were very unlikely to be able to live up to the obligations of their leases; whatever their obligations might be, if the price of coal were less than the cost of mining it, nothing could be paid to the GMA. Indeed, in difficult circumstances, lessees might attempt to stave off bankruptcy by mining in a manner which reduced short-term costs but also greatly reduced the value of the coal resource or the capital equipment. A lease can require compensation for such damages, although the transaction costs of measuring damage or determining negligence in the case of fires or other accidents are far from trivial, but those provisions are of no value if the lessee lacks the means to pay compensation. Leasing was thus a poor means of shifting the risk of losses from the owners of the resource to others. At the same time, a long-term lease would guarantee that lessees would gain the profits from high prices and good conditions. In the case of Routledge's offer, the board was making a decision after it had invested the firm's capital in the mine and the risks of abuse of capital were added to the risks of abuse of the resource. In general, however, the investors in the GMA seem to have been quite willing to assume the risks of coal mining in order to win the potential profits and leasing was of little interest to them.

The preceding discussion considers leasing or contracting out mining as alternatives to direct operations where the firm did develop coal deposits, but the firm also avoided subleasing as a supplement to direct operations even though far more minerals were included in the GMA's sublease than the firm ever developed. While direct operations may have been the best means of earning the highest return on the capital the investors were willing to risk in mining, leasing out the mineral deposits could have yielded additional revenues from capital which others ventured in the industry. But rather than grant leases, mineral deposits were left idle. Not subletting minerals can be viewed as either a failure to take advantage of potentially profitable opportunities, or else an indication that neglected mineral deposits offered little opportunity for profit. The level of activity which resulted after the GMA control of mineral rights was broken gives some indication of the extent to which profitable opportunities were neglected.

Clearly many deposits of coal which could be profitably mined were neglected by the GMA, because as soon as restrictions were lifted in 1858 these deposits were developed and profitable mines were established. The possibility remains that the firm simply neglected potentially profitable opportunities through miscalculation, lack of enterprise or lack of foresight. However, refusal to lease the right to develop coal mines may have been a rational profit maximising decision. By the 1830s the firm had invested considerable capital in its mines, which was severely under utilised whenever markets were poor and the volume of sales fell. Any sales from new mines during depressed conditions would have exacerbated the problem of excess capacity. In addition, new mines run by lessees had the potential to undermine the firm's monopoly in the local market.

The only mineral deposit the firm ever sublet was at Joggins, where a mine was opened in 1846. That lease was granted only because otherwise the firm would have been forced to allow independent development of the deposit, since a provision of the firm's lease stipulated that if deposits of minerals were brought to its attention, the firm must develop them within a year or else allow the province to grant the right to work the deposits to others.[27] Output at that mine remained at less than 10,000 tons per year as long as it was owned by the GMA.[28] It seems quite clear that leasing was not viewed as an attractive arrangement; neglecting the resource entirely would have been preferable, but the lease was regarded as superior either to allowing independent competition in Nova Scotia or to investing considerable capital in it themselves.

Whether profitable opportunities to develop minerals other than coal were overlooked by the firm is difficult to determine, although a relative lack of activity after 1858 implies that neglected opportunities were few. Before 1858, petitions to work minerals controlled by the GMA were restricted to coal. The only other mining activity which greatly increased after 1858 was gold mining which began in 1863 at a time when Greenback inflation in the United States had raised the price of gold. In the absence of the GMA's privileges, prospecting for gold and development of veins might have become profitable at an earlier date, although that cannot be determined here. In addition, an American company was developing a copper mine near Cheticamp in 1863, but little more was heard of it.[29] Except possibly in the case of gold, if there were profitable opportunities overlooked by the GMA while it controlled Nova Scotia's resources, they either continued to be overlooked after 1858 or else had ceased to be profitable by that time.

Good reasons for avoiding leasing of mineral rights are apparent, but a more aggressive firm, or perhaps a firm with its board of directors in closer proximity to the region where it operated, might have weighed the costs and benefits of leasing coal or other minerals differently than did the GMA. The firm's early disappointment when development of anthracite had greatly reduced the potential for profit in the American market may have led to excessively cautious behaviour for the remainder of the firm's history. Nonetheless, whether the firm's behaviour was a result of the excessive caution of investors, of a correct assessment of the potential for profit, or of the location of the board of directors cannot be determined with certainty.

III

By the late 1820s British investors had secured a valuable asset, a 60-year lease of the mineral rights of Nova Scotia, and had chosen to operate mines in the province directly. Although this firm originated as a result of a mercantilist grant of special privileges, the organisational structure of the firm created to exploit the mines, the General Mining Association, does not appear to have been remarkable in any way for the middle of the nineteenth century. Even though the company was transnational, it showed little complexity in management techniques. The extent of the firm's mineral rights made it profitable for it to work a number of mines, but there was little co-ordination of management between the mines and only a minimal managerial hierarchy.

The General Mining Association established a board of directors based in London which met several times a month and actively oversaw the activities of the business. Managers were hired and the Albion Mine was opened in Pictou County near New Glasgow, Sydney Mine was opened at Sydney harbour and smaller mines were worked in Cape Breton from time to time. Agents were appointed in Halifax to market the coal and take responsibility for managing the firm's finances and various related duties. The result was a free-standing company with operations at several locations, although within one region. The firm was capitalised at £2,000,000 in 2,000 shares of £100 each. Twenty pounds was paid on each share so that paid-up capital was £400,000.[30] Extensive capital works were carried out and coal mining expanded greatly.

If the mine was to be worked directly by the GMA with British capital, then the interests of the British shareholders had to be protected, and a British based board of directors was more than likely the most effective mechanism. Without some means of influencing the behaviour of the company, shareholders could well have found that Nova Scotian managers greatly reduced the value of their assets or their rate of return in order to benefit themselves. A domestic board of directors offered a degree of protection.[31]

The board was not established as a matter of form or for show; it was actively involved in the management of the mine. For example, the board set the price of the coal for each shipping season, determined the amount of coal to be raised and banked during the winter for sale in the summer, controlled the purchase of major capital equipment and arranged for a shipload of supplies to be sent to the mines from Britain each year. Moreover, when it made these decisions, it did not blindly follow the advice of management; Richard Brown Sr. complained of the difficulty he experienced in convincing the board to take action that he believed would be beneficial to it.[32]

The GMA operated in Nova Scotia by hiring salaried managers with extensive experience in the British coal industry to operate each of the major mines. These engineers introduced British mining technology and arranged the immigration of experienced British colliers. As was typical of early nineteenth century firms, few white collar workers were employed. For example, the administrative structure at the Albion mine in Pictou County in 1858 consisted of the manager and two clerks. Two bailiffs and two shipping officers were also employed above ground and four 'overmen' or foremen worked below ground. The total labour force at that mine was 398.[33]

In one respect, the GMA differed from the majority of mining firms operating in the earlier nineteenth century, and indeed from most coal mining firms established in Nova Scotia in the third quarter of the century, in that it operated more than one mine.[34] Opening a number of mines was justified by the variation in the type of coal at each mine and perhaps by some diseconomies of scale in mining at one location. Coal from different parts of Nova Scotia differed in chemical composition, and different types of coal served different markets. In addition, some shallow deposits may have been worked at very low cost, at least for a time. Therefore, operating more than one mine had the potential to increase sales and reduce costs.

By far the largest mines were Sydney Mines in Cape Breton and the Albion Mine in Pictou County. Smaller mines were opened during the century at Bridgeport, Bras d'Or and Lingan in Cape Breton and at Joggins in Cumberland County, but only at Lingan did the level of output become at all significant.[35] Sydney coal was best for domestic heat and raising steam, while Pictou and Lingan coal was superior in producing gas and was much preferred in the American market to Sydney coal. Sydney coal found a ready market in British North America, where superior anthracite was not available at competitive prices.

For most of the firm's history, no management hierarchy was established to co-ordinate the activities of each individual mine. While the first manager at Albion Mines, Richard Smith, also oversaw operations at Sydney for a time, when the mines were well established the manager of each mine was individually responsible to the board of directors. Interaction between the mines was limited to redirecting of ships from a mine whose loading facilities were over-taxed to a neighbouring mine or to the occasional borrowing or sharing of equipment.[36] Poor communications and transportation made a greater degree of co-operation between Albion Mine and Sydney Mines quite difficult. Connecting rail service was established between Cape Breton and the mainland only in the 1890s. Communication by sea was impossible from January until April, so that travel was particularly difficult during those months.

Opportunities for co-operation between mines in Cape Breton were somewhat greater than between Cape Breton and the mainland. However, as noted earlier, even as late as 1870 the managers at Sydney Mines and Lingan were independently responsible to the board of directors. Not until very difficult market conditions drove the board to reduce production drastically at the Lingan mine was its management transferred to the manager of the Sydney mine, whose salary was modestly increased. However, this measure was a response to the need to cut overheads when output had been greatly reduced, rather than a change in the principles of management.[37]

The firm engaged agents in Halifax, and in this it drew on the experience and practice of firms engaged in long distance commerce. Samuel Cunard, the founder of the Cunard steamship lines, was engaged as agent in the 1830s and he or his firm served as agents to the GMA until its demise in 1900. The agent was not a full-time employee, although he was paid a salary; he acted for the GMA simply as one part of his larger business interests.[38] His function was to sell coal and to secure supplies for the mine, and at least initially his activities differed little from those of general merchants of the era who both exported the province's staples and imported a wide range of goods. Agents with similar basic responsibilities have a long history, and their use by an industrial firm in the nineteenth century was quite common. Indeed, coal firms continued to use agents well into the nineteenth century.[39]

The agent's usefulness did extend beyond the buying and selling of goods, however. He provided a source of information independent of the mine managers which could yield some protection from self-serving managerial policies. As a result, to some extent he served a supervisory role, but his abilities to oversee mine operations were severely restricted by his lack of technical competence; the agent was a merchant and had no direct experience with mining. A very important additional function was his role as advocate for the firm in its relations with the provincial and the imperial government.

The most significant economies the firm experienced as a result of operating several mines appear to have been the spreading of the cost of obtaining information about North American coal markets and the direct expenses of the board of directors over a number of mines. In addition, the firm was able to economise on maintaining good relations with the provincial government by having the agent speak for all the mines; however, the necessity of investing in maintaining these relations stemmed from the privileges which resulted in operation of more than one mine.

Like all mining companies, the firm also engaged in a degree of vertical integration by investing in industrial activities supportive of but not directly connected with mining. Equipment had to be built to suit the specific conditions of the mine, so a foundry was established at each major mine. Short railroads for moving coal between the mine and the loading wharf were built at Sydney Mines and at Albion Mine.[40]

More surprisingly, a farm was established at Sydney Mines which supplied hay and oats and perhaps pasturage to the horses used in the mine. Early correspondence from Sydney Mines indicates that securing adequate supplies of good quality feed was difficult. While Cape Breton farmers supplied some needs of the mine, hay and oats were also imported from the United States, and were not always in satisfactory condition when they arrived.[41] While local farmers would certainly be expected to have produced sufficient surpluses to meet the needs of the mines for hay and oats by the 1870s, the firm continued to operate its own farm.[42] Possibly security of supply of feed of adequate quality for the unusually heavy work of horses in mines remained a problem, or the necessity of providing pasturage for horses required sufficient investment in one type of farming, that the extra cost of producing feed as well was relatively small.

Mining almost always requires the creation of a mining town, and for very good reasons the mining company normally provides much of the infrastructure.[43] The situation in the Nova Scotian coal industry was no different and the GMA built all its workers' housing. The firm also ensured that schools, medical care, religious services, and even a reading room and reading materials were available to workers either through deductions from their pay or occasionally through its own contributions. The economic motivation for the firm's concern in these departments was to maintain a sober and responsible work force.

Mining companies frequently operated a general store and often paid workers in truck rather than money. Early in the century when cash was scarce the practice eased problems of obtaining currency to pay wages. Throughout the century, payment in kind was useful as a means of easing cash flow problems. Particularly in the winter when coal could not be shipped, the time period between the raising of coal and the receipt of payment for it was quite long. A mining company could obtain goods for its store on credit and supply these to its workers in lieu of cash. In addition, when retaining a labour force was not a difficulty, as in periods of depression and contraction of the industry, such a store could provide considerable monopsony profits. Refusal to pay workers in cash forced them to deal only with the company store, and increased prices for goods were an indirect means of reducing the workers' wages. Brown Sr.'s correspondence indicates that the GMA established a company store under his son's control only in the depressed 1870s at which time it made a significant contribution to the firm's profit. Even then, workers apparently were not forced to deal with the store, since the father admonished his son to maintain reasonable prices so that he secured all the custom of the workers.[44]

Although the General Mining Association was not a single unit firm and can be said to have engaged in a degree of vertical integration, it bore little resemblance to the modern multiunit corporation. The range of activities of the firm involved no complex organisational problems and the managerial hierarchy was minimal. The GMA's lease made it profitable for the firm to work a number of mines, and allowed it to raise the capital to expand the scale on which they were worked, but the basic organisational structure of the firm and the range of activities which it undertook in no way set this firm apart from others in North America. Any extra complexity of the GMA was derived from the extent of its mineral rights, not from specific advantages in having several mines worked by one firm, a conclusion supported by the lack of any co-ordination of management between the mines.

IV

Although ultimately the highly integrated corporation dominated the Nova Scotia coal industry – indeed the coal industry of the province was absorbed by a single iron and steel company in the 1920s – failure to establish an integrated corporation before the latter part of the nineteenth century can be attributed to the relatively primitive technology of transportation and communication, and to the techniques of smelting iron which were suited to the pattern of resource abundance of nineteenth century North America. Indeed, the obstacles which the technology of production and transportation imposed through most of the nineteenth century illustrate the crucial role the modernisation of transportation and changes in production techniques played in the evolution of the modern corporation.

The high bulk and low value of coal caused transportation costs to form a very large portion of the total cost of delivered coal, so that coal mining companies were very dependent on the transportation system which took the product to market.[45] Nonetheless, the technology of the sailing ship era made use of the market for the shipping of coal far more efficient than internalising that activity within the firm by integrating shipping and mining. The sailing ship industry required flexible and independent management of ships to achieve efficiency, so that concentrated ownership of a large number of ships by a coal company would have been very likely to increase transportation costs. Moreover, since no coal mine was dependent on any one shipper, and no shipper was dependent on any one coal mine for a cargo, integration of mining and shipping was not warranted by mutual dependence of two capital investments. A shipmaster who found that a poorly run coal mine resulted in costly delays in loading, or a mine manager who found that a ship master failed to deliver coal promptly could simply take their business elsewhere.

In contrast, once a railroad was built to serve a mine, the coal mine and the railroad were forced to deal with each other, regardless of the other's inefficiency or attempts to extract monopoly profits. The cheek-by-jowl nature of their fixed investments made common ownership the best protection of each of their interests.[46] For example, the Lehigh Coal & Navigation Co. controlled all the anthracite of that county in Pennsylvania and invested in a canal and improvements to the Lehigh River, a tributary of the Delaware. The Schuylkill Navigation Co. was prohibited from controlling coal lands by its charter, so that mining and transportation were initially independently controlled, but in the 1860s the Philadelphia & Reading Railroad bought up the coal lands in that county.[47]

The major advantage of the Nova Scotian coal industry in the earlier nineteenth century was the accessibility of coal deposits to ocean shipping, so the required investment in railroads was minimal and the costs of the industry in Nova Scotia were initially much less than in regions where an extensive transportation infrastructure had to be created. Wherever improved transportation to ocean shipping was required in Nova Scotia, coal companies built their own railroads, so that transportation and coal mining were fully integrated. As noted above, the GMA built and operated short lines from the pit head to the loading wharf in Pictou and Sydney. Mining companies established in the latter half of the nineteenth century were less advantageously situated with respect to ocean shipping. The Sydney & Louisbourg Coal & Railroad Co. operated a railroad which could carry coal to the harbour at Sydney in the summer and to the winter port at Louisbourg.[48] Owners of the Springhill coal deposits invested heavily in branch lines to connect their coal deposits with the Intercolonial Railroad, completed in 1876, as well as with the Bay of Fundy.

The GMA laid rails and used locomotives to carry coal to loading wharves, but at that point the firm sold its coal to whatever ships arrived. In some cases, the ship's master took possession of the coal in order to sell it himself in whatever market he thought most profitable. Most coal was sold to customers in distant cities who chartered ships to deliver it to them. During the 1830s the GMA experimented with chartering ships to carry coal into the American market for sale there through an agent, but the price obtained frequently failed to cover the costs of raising and shipping the coal. As a result, the firm's preference was to sell the coal in Nova Scotia.

Although the integration of shipping coal by sail with the production of coal was not economic, the GMA found that reliance on the competitive market for provision of shipping facilities had serious disadvantages in that its ability to provide a reliable supply of coal at a guaranteed price was reduced. Co-ordinating shipping with production, demand and the availability of loading facilities was difficult. When markets were buoyant, the shipping available was sometimes insufficient to carry all the coal which customers wished to buy. In addition, the firm could not regulate the arrival of ships, and during times of high American coal prices, more ships arrived than could be accommodated at the loading wharves. The great variability of freight rates precluded delivering coal at a guaranteed price.[49]

Before 1858 the firm may also have found its ability to profit fully from its monopoly inhibited because it did not control the delivery of coal to market. The American coal market was far more competitive than the British North American market and as a result, the potential existed to increase profits through price discrimination, that is by charging more for coal in Nova Scotia than in the United States (after making allowance for transportation costs). However, selling the coal at the loading wharf prevented the separation of markets necessary to engage in price discrimination. The best the firm could do was to offer a discount on the accounts of customers who purchased large quantities of coal for delivery to the United States.[50] By offering a discount on coal shipped to the United States, a higher price could be maintained at the loading wharf than would otherwise be possible, so that a portion of the potential monopoly profits were won.

The difficulties the GMA experienced from its dependence on the sailing ship supports the emphasis placed on the role of the development of modern steam transportation in the evolution of the corporation. A major goal of the modern multiunit corporation was to improve the stability and reliability of the flow of goods from the source of the raw material to the delivery of the final product to the consumer.[51] Attempts to achieve this goal through integration of various production processes or of marketing would be frustrated if the flow of goods was repeatedly impeded by delays and bottle necks caused by dependence on the unreliable sailing ship. Once transportation became reliable, the potential of the integrated multiunit corporation greatly increased.

Changes in the techniques of production as well as the modernisation of transportation contributed to the evolution of the modern multiunit corporation. Modern techniques of smelting iron and manufacturing steel with coal as the fuel encouraged the integration of coal mining with iron and steel production. The efficient use of the large capital investment necessary to produce steel required an assured supply of fuel and ore, so that steel producers generally integrated backwards. In addition, the cost of transporting coal could be eliminated by locating steel production at the coal mine. The cheek-by-jowl location of the mine and the steel mill was an additional factor causing mutual dependence of the coal mine and the steel plant and encouraged joint ownership to prevent conflict between the two.

The GMA's failure to integrate iron manufacture and coal mining early in the nineteenth century is best explained by the limitations of technology, given the pattern of resource abundance at the time, since forward integration into iron smelting was attempted by the GMA in 1827, but was soon rejected. Small deposits of iron ore were found near the Pictou County coal mines, and the firm built a blast furnace to smelt the iron with its coal. The quality of the output of the furnace was disappointing, which is not surprising given the high sulphur content of Nova Scotian coal, and when the furnace was destroyed by fire, it was not replaced. Clearly the firm had learned that the potential profits from smelting iron with the coal it mined did not justify investment in a blast furnace. The firm made no further attempts to smelt iron.

The history of the iron and steel industry indicates that the use of coal in the production of iron was indeed premature in Nova Scotia in the early nineteenth century.[52] The ready abundance of charcoal and the superior quality of iron manufactured with it meant that only the sulphur-free anthracite and Connellsville coke of Pittsburgh could produce a product competitive with iron smelted with charcoal.[53] Even as iron smelted with these fuels entered American markets in the 1840s, investment in charcoal blast furnaces continued. In Nova Scotia, mineral rights in iron ore had been granted with the land at Nictaux Falls and Londonderry before the GMA received its lease, and these ores were smelted with charcoal in 1825 and 1850 respectively. A more dynamic and aggressive firm possessing the mineral rights to iron ore might have sought out additional deposits of iron ore and invested in charcoal smelting, but such activities would have had little connection with the GMA's coal mines.

In 1879 the Seimens-Martin method was introduced at Londonderry by Seimens himself, and coke was used as fuel, some of which was produced at the Albion mine.[54] Only at the very end of the century were vertically integrated steel companies formed, using coal as the fuel, and then a better source of iron ore than that available in Nova Scotia was imported from Newfoundland.

Although the passive response of the GMA to the appearance of large horizontally and vertically integrated firms in the last quarter of the nineteenth centuries must be discussed, in the early to mid-nineteenth century, the GMA pursued all forms of integration commonly adopted by mining companies. Where integration later associated with mining was absent, the absence is easily understood, and indeed the factors which discouraged the GMA from further integration explain why the appearance of the integrated corporation was delayed until late in the nineteenth century.

V

The discussion of the General Mining Association presented to this point indicates that there was little unusual in this company's organisation when compared to contemporary mid-nineteenth-century mining companies. By the 1860s even its organisation as a free-standing company was not unusual, for when large amounts of capital had to be raised to expand mines, new firms adopted the same structure. However, in the last two decades of the nineteenth century, the organisation of firms changed dramatically. In the 1880s, coal mining companies entered horizontal mergers. Finally at the turn of the century, the industry became vertically integrated as iron and steel producers purchased coal mines. During these changes the GMA responded passively, retreating in the face of adversity, even when rivals expanded. Other firms initiated the horizontal and vertical mergers; the GMA's response was not to expand or reorganise, but to seek opportunities to sell its assets at good prices.

While many companies grew and eventually became modern multiunit firms, the passive behaviour of the GMA was not necessarily atypical. After all, during the late nineteenth century the typical firm was absorbed by a more aggressive rival, and most firms disappeared while only a few continued as modern integrated corporations. Securing a good price for shareholders' assets may not be a mark of failure. Nonetheless, while a firm cannot categorically be said to have failed because it ceased to exist, we may wonder why the largest firm in the industry in 1870 did not perform more strongly during the remainder of the century.

The GMA was first challenged with direct competition in Nova Scotia when the terms of its lease were renegotiated in 1858, and the firm lost its exclusive rights to the minerals of the province. Expansion of the coal mining industry had clearly been repressed for some time. New firms quickly appeared, with about ten new firms operating by 1859. These new mines were small and had an even less complex structure than the GMA; they were generally single proprietorships or partnerships in which the owners were directly involved in management.[55]

Although initially their output was small, a few mines soon showed their potential for extensive development, so that by 1866 three independent mines produced substantial amounts of coal; the Blockhouse mine produced about 88,000 tons, Glace Bay about 54,000 and Gowrie about 27,000 tons. Total annual output of the Nova Scotian industry had grown to 560,000 tons. The GMA still remained the dominant firm with an output of 173,000 tons at the Albion mine and 117,500 tons at the Sydney.

As the scale of production of new mines grew, local supplies of capital available to the industry became insufficient to finance perceived opportunities. Funds were raised in distant if not always foreign cities, and the resulting corporate form was often a free-standing company. The Intercolonial Coal Co. Ltd. was formed in Pictou County in 1867 with capital raised from Montreal capitalists and a Montreal board of directors. The mine was operated by a manager.[56] The Acadia Coal Co. Ltd. was formed in 1865 with New York capital and New York board of directors. The majority of the directors of a short lived coal mine, the Nova Scotia Coal Co., incorporated in 1864, resided in New Haven, Connecticut. The only local people on these boards of directors were the men who discovered the seams of coal and had promoted their development.[57] These firms appear to have operated independently of any other corporate structures, and generally the investors had accumulated their capital in quite unrelated industries. Each firm initially operated only one mine, and although each firm's activities must have differed in detail, the general range of activities undertaken appears to have been similar to those of the GMA.

The particularly favourable circumstances created by the prosperity of the 1850s, the stimulus of the removal of American tariffs on coal as a result of the Reciprocity Treaty of 1854, and the increase in demand caused by the American Civil War allowed the industry's increasing output to be absorbed by the market with little difficulty. Circumstances changed greatly after 1867. The end of the Civil War, the imposition of a high tariff after the abrogation of Reciprocity and the introduction of low bulk commodity rates on American bituminous coal combined to exclude Nova Scotian coal from the American market.[58] Exports to the United States from all Nova Scotian mines fell from a peak of 465,194 tons in 1865 to 51,641 tons in 1879.[59] Alternative markets were inadequate during the 1870s, and the industry was seriously depressed.

The shareholders of the GMA became quite concerned about the management of the company when a dividend was not paid in 1867 because of the deterioration in business conditions. A Committee of Inquiry was appointed which travelled to Nova Scotia and made recommendations intended to improve the performance of the firm. The action taken included cost cutting through reductions in salaries and directors' fees as well as the contraction of operations at unprofitable mines, actions which reflected no alteration in organisation. However, although salaries were reduced, both the managers and agents were to receive a small share of the profits of the mine they controlled or of the business in general respectively; the board did seem to believe that added incentives would improve performance. Additional economies in management were achieved by adding Lingan to the responsibilities of the manager of Sydney Mines, but only after operations at that mine had been halved because of lack of markets for its output.[60]

The board introduced some changes in the management of the mines. The firm gained its first general manager with competence in mining technology in 1871 when John Rutherford, previously provincial inspector of mines, was appointed to supervise mining activity at all the GMA mines. While the managers of Sydney Mines and the Albion mines naturally resented the imposition of a supervisor, Brown Sr. cautioned his son that complaints to the board were unwise and consoled him by noting that Rutherford would be a source of good advice and would eliminate interference by the Halifax agents who had no technical expertise whatsoever.[61] In fact, the salary paid to the Halifax agents was cut, and their duties were confined entirely to financial and marketing matters.

Richard Brown Sr. was pleased to see the role of the Halifax agents reduced, not only because of their lack of technical competence, but also because he believed that the poor success of Sydney coal in many markets was due to lack of enterprise on their part. He recommended to the board that appointing an agent for each major market could increase the sales of coal. Apparently the board agreed with him because additional agents were appointed. The Newfoundland market was to be served by a St. John's agent. A Mr Mellege was appointed for the American market.[62]

These organisational changes reflect some increase in management complexity, in that two mines had one manager, and that a general supervisor with technical competence was added to the management structure. However, although the development of markets was given great importance, the sole innovation in marketing was to increase the number of agents, rather than to develop an alternative approach. Innovation in marketing continued to be hampered by dependence on shipment by sailing ship, still the lowest cost means of moving coal to the American market.

While attempts were made to improve the efficiency of operations, the most dramatic change made by the firm was to contract operations. The board seems to have become extremely cautious about venturing additional capital in its Nova Scotian ventures. As early as 1866, when abrogation of the Reciprocity Treaty was anticipated, Richard Brown Sr. writes of their 'perfect horror of ordering machinery'.[63] By 1870 the persistence of depressed conditions resulted in more drastic action. The board directed that half the colliers at the Albion Mine be discharged, as well as half of those at Lingan, in order to keep production of coal in proportion to sales.[64] In 1871 Brown advised his son to maintain good relations with neighbouring mines so that he might obtain a job with one of them if the board sold all the GMA mines, which he was sure it would do if it could secure a good offer.[65]

The board did in fact sell mines. Joggins was sold in 1871.[66] Of far more significance, the Albion mine was sold in 1872 for £160,000. One third of the sum was used to pay off debentures and the remainder was distributed among the shareholders. From that year the GMA's operations were concentrated entirely in Cape Breton. The Albion mine had produced approximately half of the GMA's output of coal, and the firm's total output never again equalled the 365,000 tons produced in the peak year, 1864. Brown believed that the price received for the mine was too low, considering the value of the assets in place, but he noted that the mine had been losing money for a number of years.[67] In addition to poor conditions in the American market where most Albion coal had been sold, the mine had experienced severe production difficulties. The gaseous nature of the coal made Pictou mines prone to fires and explosions. The previous year a serious fire which could not be extinguished permanently terminated production in one pit. The GMA ceased using explosives in this mine and instead used mechanical wedges to break up the coal, increasing the expense of working it.[68]

A degree of prosperity returned to the Nova Scotian industry in 1879, as Quebec took an ever larger share of Nova Scotia's coal output. That growth coincided with and likely resulted from the imposition of a $0.50 per ton duty on coal brought to Canada. Provincial production of coal expanded from 688,624 tons in 1879 to 1,786,111 tons in 1890 to 2,997,546 in 1900.[69] During this period, the industry underwent dramatic reorganisation, in a pattern common to many industries in North America. The ultimate result was a highly concentrated, vertically integrated industry.

Development of the coal industry in Springhill, Cumberland County, differed from that of the rest of the province, in that the region was dependent from the start on railways to move the coal to market. Significantly this was the first region where more integrated companies appeared. The Springhill Mine required a four mile long railroad to connect the pit head to the Intercolonial Railway, which was built and operated without any great difficulty by the mining company. In order to gain improved access to ocean shipping, a considerably longer line was required, and the Springhill & Parrsboro Coal & Railway Co. was formed in 1872 to facilitate its construction. This company was controlled by Halifax and St. John capitalists, but was unable to raise sufficient funds to properly construct the line. In 1882 Montreal capitalists organised the Cumberland Railway & Coal Co., which took over the Springhill & Parrsboro Coal & Railway Co. and the Springhill Mine.[70] This firm produced rather more than quarter of Nova Scotia's coal during the 1880s.

In 1886 the Acadia Co. initiated a horizontal merger by buying the Albion Mine from the firm which had purchased it from the GMA, together with the Vale Coal Iron & Manufacturing Co. which operated in nearby, but not adjacent, Thorburn.[71] One other substantial firm operating in Pictou County, the Intercolonial Coal Co., did not join this horizontal merger. While the Acadia mine never surpassed Springhill in size, it did become the second largest coal company in the province. From 1886 to 1892 the five largest firms produced from 58 to 60 per cent of the coal in the province. The GMA was one of these five throughout this period.

In 1893 a far more dramatic horizontal merger occurred in Cape Breton. With the vigorous encouragement of the provincial government, Henry Melville Whitney of Boston formed the Dominion Coal Co., buying up the majority of the numerous active mines on the island as well as purchasing inactive mining properties. The GMA allowed Whitney to acquire an option to purchase the Sydney mine, but that option was never exercised because Whitney's interests were unable to secure sufficient funds. Sydney Mines was a larger mine than the others Whitney purchased, and the purchase price stipulated in the offer was £190,000 or $924,660, so that inadequacy of funds may have been a concern, even for Whitney.[72]

The story of Whitney's operations in Cape Breton has been told elsewhere and in itself forms an interesting and instructive chapter in the history of the evolution of the firm.[73] It should be noted that Dominion Coal was an independent company with shareholders in the United States and operations only in Cape Breton, so it too appears to have been a free-standing company. Whitney had large interests in Boston companies which required cheap supplies of coal, and possession of secure access to markets with these companies doubtless stimulated his interest in Cape Breton's coal, but there was no integration between these firms; the coal company sold to them on contract. The board of directors included men from Boston, New York and Montreal and two residents of Nova Scotia, one of whom had earlier moved to Cape Breton from Montreal to manage a Nova Scotian coal mine.[74]

Whitney had no experience of coal mining, and unfortunately his talents lay in financing and securing government assistance for projects, rather than in operating them efficiently.[75] Nevertheless, for a time his company increased sales into Boston, and output expanded far beyond the combined total production of the absorbed firms. While not even the Cumberland Coal & Railway Co.'s mine had ever controlled more than 29 per cent of total sales of coal, by 1900 Dominion Coal controlled 60 per cent of all coal sold in the province. Springhill was second largest with 13 per cent and Acadia's share of sales was less than nine per cent. Together these three firms sold 82 per cent of all coal sold in the province.[76]

Whitney did not restrict his interests to coal. In 1899 he formed the Dominion Iron & Steel Co. While many of the members of the boards of directors of this company and the Dominion Coal Co. were the same, the management structures of the two companies were independent of each other, and they did not form a fully integrated coal and steel company. Instead, Dominion Iron & Steel bought coal on contract from Dominion Coal. But, in spite of the close connections between the boards of the two firms, they were often in conflict.[77] The tension was resolved in 1910 when a merger was effected between the Dominion Coal Co., the Cumberland Railway & Coal Co. and the Dominion Iron & Steel Corporation. Whitney had retired from Cape Breton soon after the formation of Dominion Iron & Steel, and this merger was effected and controlled by central Canadian capitalists.[78]

Although Whitney was first to form a modern steel company in Cape

Breton, Pictou county capitalists had in fact first taken the initiative to integrate the industry fully. They formed the Nova Scotia Steel Co. in 1882 which produced the first steel ingots made in Canada and by 1897 was a highly integrated locally controlled corporation.[79] Finding Pictou County supplies of iron ore and coal inadequate, the owners of this cautiously and effectively managed firm purchased a deposit of ore on Bell Isle, Newfoundland. Sale of a portion of these deposits to the Dominion Iron & Steel Co. at a dramatic profit financed the purchase of Sydney Mines from the General Mining Association in 1900, and secured a supply of coal which was suitable for metallurgy.[80] Thus the General Mining Association was absorbed by a locally owned vertically integrated iron and steel company. The Nova Scotia Steel Co. built a primary iron and steel plant near the coal mine and operated as the Nova Scotia Steel & Coal Co. until 1921, when it merged with the Dominion Steel Corporation and Halifax Shipyards Ltd. to form the British Empire Steel Co.[81]

Thus, as in many industries, vertical integration had soon followed horizontal integration. Between 1882 and 1900 a coal industry consisting of a large number of highly competitive firms had been transformed into a highly concentrated and integrated coal, iron and steel industry. The Acadia Co. which owned the old Albion mine and other valuable properties in Pictou county was still independent, but it was merged with the Nova Scotia Steel & Coal Co. in 1919. The General Mining Association played a passive role throughout this process; it participated actively in neither the horizontal nor the vertical mergers, but was willing to sell its assets when an attractive price was offered.

The history of the GMA and of the Nova Scotia coal industry follow the general pattern of the industrial development in late nineteenth century North America quite closely. Independent firms gradually merged, forming first horizontally and subsequently vertically integrated corporations. However, free-standing companies had an important role to play in the history of the industry because the scale of mining exceeded the capacity of local capital before the integrated multiunit corporation became a viable institution. Since investment in mining was risky and vulnerable to fraud and abuse of the resource and capital stock, investors needed to protect their capital. Free-standing companies were a means of channelling funds into growing regions while protecting the interests of the shareholders.

VI

Although the General Mining Association was a free-standing company created in 1826 with quite remarkable property rights, in most ways there was little that was unique in its operations in Nova Scotia. It undertook the usual operations of coal companies in Nova Scotia and elsewhere. Once it lost its monopoly, it was one of many firms operating in the province, and was not the only one that was foreign owned with a distant board of directors.[82] During the merger movement characteristic of the late nineteenth century, some Cumberland and Pictou county coal companies distinguished themselves by taking the initiative to form horizontal mergers. But horizontal merger was at first conspicuously absent from Cape Breton, where the General Mining Association continued to operate, although its size would have allowed it to display leadership in a merger. When Whitney purchased other coal mines in Cape Breton, the GMA offered no resistance and allowed him to secure an option on the firm, although Whitney lacked the financial capacity to make the purchase. Thus Boston, Montreal, Toronto and New York capitalists who controlled other mines or entered the industry led the way in drawing together coal mining companies while the GMA stood on the side lines. In the vertical integration of the first years of the twentieth century, all the coal mining companies were passive; they did not integrate forward, and instead iron and steel companies integrated backward. The GMA had long been willing to sell for a suitable price, and in 1900 the Nova Scotia Steel & Coal Co. was willing and able to pay the price asked by the GMA.

Assessing this free-standing company is not easy. It survived for three-quarters of a century through dramatically changing economic circumstances. It did not adopt an aggressive and expansive policy at any time after the first few years of its history. While the initial development of coal resources was certainly substantial for the era, once the first mines were established, the firm showed only limited interest in developing new deposits or engaging in other activities. The investors may have had their initial high hopes for the industry dashed when within a few years of the company's founding they discovered that development of American anthracite left them only a very small and precarious share of the American demand for fuel.

Once their capital had been sunk, the firm's opportunity cost was low and it continued operations with cautious and skilled management. The 1850s and 1860s were markedly prosperous and the firm could have attempted to expand its operations at that time. Given the very difficult conditions which soon ensued, the investors must have been just as glad they had not. The firm's long-standing reluctance to inject large quantities of new capital into the business was replaced by a strong, if not unwavering, policy of retreat. While opportunities for profit may have been neglected, the firm did not leave the industry through bankruptcy nor did it sell its assets with the fear of imminent failure forcing the acceptance of a low price. A more aggressive policy might have had results far less pleasing to the shareholders. Instead, the shareholders' interests were protected, and the firm left the industry with the same dignity with which it had conducted itself during the nineteenth century, but it certainly was not a source of dynamic corporate growth.

Although free-standing companies lack many of the advantages of multinational corporations, association of the GMA's lack of dynamism with its organisational structure is hardly a tenable thesis. Certainly the physical, and perhaps also psychological, distance of London from Nova Scotia may have contributed to the caution of the firm. After all, the directors and shareholders must have found securing trustworthy information on potentially profitable opportunities more difficult than did capitalists in Montreal, Boston and New York who had daily knowledge of coal markets and who could easily visit Nova Scotia themselves. Nonetheless, rival firms which behaved far more aggressively were generally also free-standing companies.

The history of the General Mining Association is more interesting because it was so typical for its era, rather than because it was unique. Even the extraordinary privileges it received in the 60-year sublease from the Duke of York reflected practices typical of the era of mercantilism which lingered well into the nineteenth century in Nova Scotia. As has been seen, free-standing companies were the norm, not the exception, in Nova Scotia. When the merger movement of the late nineteenth century reached this province, some free-standing companies aggressively pursued mergers while others allowed themselves to be absorbed. The passivity of the GMA is far better explained by the great distance of its board of directors from its field of operations, by the temperament and resources of the owners, or by a reasonable assessment of the profitability of proposed ventures than by the structure of the firm. Whether or not the industry would have fared better in the twentieth century if externally controlled firms were far less common than they actually were is a question which lies outside the scope of this study.

NOTES

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1. The literature on the multinational is extensive. P. Hertner and G. Jones (eds.), *Multinationals: Theory and History* (Aldershot, 1986) contains a useful introduction to the theory of the multinational enterprise. In this work see especially P. Hertner and G. Jones, 'Multinationals Theory and History', pp. 1–18; J.H. Dunning, J.A. Cantwell and T.A.B. Corley, 'The Theory of International Production: Some Historical Antecedents', pp. 19–41; M. Casson, 'General Theories of the Multinational Enterprise: Their Relevance to Business History', pp. 42–63, and S. Nicholas, 'The Theory of Multinational Enterprise as a Transactional Mode', pp. 64–95. The assumption of the modernity of foreign direct investment has been challenged in A. Carlos and S. Nicholas, 'Giants of an Earlier Capitalism: The Chartered Trading Companies as Modern Multinationals', *Business History Review*. Vol. 62 (1988), pp. 398–419 and C. Wilson, 'The Multinational in Historical Perspective', in K. Nakagawa (ed.), *Strategy and Structure of Big Business* (Tokyo, 1976), pp. 265–86, since medieval financial houses and early trading companies established operations in a number of nations and directly controlled the capital they invested.
2. M. Wilkins has introduced the concept of the free-standing company in 'The Free-standing Company, 1870–1914: An Important Type of British Foreign Direct Investment', *Economic History Review*, 2nd series, Vol. 41 (1988), pp. 259–82, and 'Defining a Firm', in Hertner and Jones (eds.) *Multinationals: Theory and History*, pp. 80–96.
3. Far more attention has been given to the former pattern than the latter in the literature. See Nicholas, 'The Theory of Multinational Enterprise' and A D Chandler, 'The Growth of the Transnational Industrial Firm in the United States and the United Kingdom: A Comparative Analysis', *Economic History Review*, 2nd series, Vol XXXIII (1980), pp. 396–410. Chandler, *The Visible Hand· The Managerial Revolution in American Business* (Cambridge, MA, 1977) discusses both patterns in the evolution of the multiunit corporation.
4. A.D. Chandler, *The Visible Hand*. See p. 242, where he argues that the rather primitive methods of production used by mining industries slowed the spread of the multiunit corporation in that industry. See also Chandler, 'The Growth of the Transnational' pp. 396–414.
5. Wilkins, 'The Free-standing Company', pp. 259–65. The frequency with which the British used this institution after 1870 may well reflect the slow growth of the multiunit corporation in that company See Chandler, 'The Growth of the Transnational Industrial Firm'.
6. The founders virtually simultaneously established the General South American Mining Association which operated in Brazil, and was the product of an existing firm in Britain, but these interests are best described as parts of a minor investment group. There is no evidence of any shared managerial structure between the Nova Scotian and Brazilian operations. S.D. Chapman 'British-Based Investment Groups before 1914', *Economic History Review*, 2nd series, Vol. 38 (1985) pp. 230–51, and Wilkins, 'The Free-standing Company' pp 265–70.
7. D G. Paterson, *British Direct Investment in Canada, 1890-1914* (Toronto, 1976), p. 45.
8. Records of this firm have survived at the Beaton Institute, University College of Cape Breton, Sydney, Nova Scotia and at the Public Archives of Nova Scotia, Halifax, Nova Scotia. The Journals of the House of Assembly of Nova Scotia contain considerable information on the coal industry and this firm. I understand from Del Muise that some additional records are available at the National Archives in Ottawa and correspondence with the colonial office has been preserved in London, although I have not been able to consult these sources. A large portion of the documents of the firm's

activities appear to have been destroyed. The records of the firm's operations in Pictou County and of the Agency in Halifax were most likely destroyed when the extensive business records stored at the Cunard Wharf in Halifax were deliberately burned after the wharf was sold to the Canadian National Railroad, a sale which occurred soon after the Halifax explosion had greatly reduced available warehouse space in the city. Records of the Board of Directors in London also seem not to have survived.

9. Public Archives of Nova Scotia (hereafter PANS), RGI vol. 460 No.16. It was publicly registered as a limited liability company in 1868. Paterson, *British Direct Investment in Canada*, p. 45.
10. Casson, 'General Theories of the Multinational Enterprise', pp. 55–6.
11. Discussion of ownership advantage as a reason for transnational investment is quite common. See Casson, 'General Theories of the Multinational Enterprise', pp. 43–6 and Dunning, Cantwell and Corley, 'The Theory of International Production' who discuss the concept and its origins.
12. M. Gerriets, 'The Impact of the General Mining Association on the Early Development of the Nova Scotian Coal Industry', *Acadiensis* (1991), pp. 57–65.
13. J.S. Martell, 'Early Coal Mining in Nova Scotia', *The Dalhousie Review*, Vol. 25 (1945), pp. 156–72 and particularly D.A.Muise, 'The General Mining Association and Nova Scotia's Coal', *Canadian Bulletin of Canadian Studies*, Vol 6/7 (1983), pp. 72–6 give detailed studies of the events leading to the GMA's control of minerals; *Journals of the House of Assembly of Nova Scotia* (Halifax, 1846) (hereafter JHA), Appendix 22; JHA (1849), Appendix 21, W.J.A. Donald, *The Canadian Iron and Steel Industry: A Study in the Economic History of a Protected Industry* (Boston, 1915), pp. 55, 57–8
14. PANS, RGI, vol. 460, No. 9.
15. PANS, RGI, vol. 460, No. 16. See JHA (1847), Appendix 28 where the text of this charter is printed.
16. A. D. Chandler, 'Anthracite Coal and the Beginnings of the Industrial Revolution in the United States', *Business History Review*, Vol 46 (1972), pp. 151–3.
17. Martell, 'Early Coal Mining', p. 168. A chaldron contained 36 bushels or approximately 1.4 gross tons of coal
18. A.H. Cole, *Working Papers Price Committee*, GA 13.11, Baker Library, Harvard University provides prices of coal in Boston and New York.
19. Martell, 'Early Coal Mining', p. 168
20. See JHA (1839), Appendix 50 where a committee of the legislature praised the GMA for its positive impact on the economy of Pictou County. However, in the 1840s and 1850s appendices of the JHA reflected dissatisfaction with the company as the legislators perceived that royalties were less than might have been achieved by other arrangements and as the firm's exclusive privileges were increasingly resented by the public. R. Drummond in *Minerals and Mining in Nova Scotia* (Stellarton, 1918), pp. 172–91 provides an extensive discussion of the process of altering the firm's lease.
21. See JHA (1859), Appendix 20 for regulations regarding the leasing of minerals
22. The discussion of the theory of the multinational enterprise indicates that the ownership advantages which lead to the creation of such firms could result in leasing or licensing arrangements rather than direct operations. Therefore some reason to internalise the ownership advantage must be discovered. See Casson, 'General Theories of the Multinational Enterprise', 45–8.
23. Richard Brown (Senior) managed Sydney Mines until 1866, when he retired to London. In London he regularly participated in the meeting of the Board of Directors of the GMA. His son, Richard Henry Brown (Junior) succeeded him as manager of Sydney Mines. Until his death in 1882, the father wrote his son regularly, advising him on mine management and discussing the decisions of the Board. These letters have been preserved in the Public Archives of Nova Scotia (hereafter PANS), MG 1, Vol 151, Richard Brown Papers (hereafter RBP). Except for letter No. 108 all correspondence in Vol 151 of RBP are from Richard Brown Sr. to Richard H. Brown Jr.
24. PANS MG 1, Vol. 151, RBP, No. 108, Richard H. Brown Jr. to Richard Brown Sr., 19 Sept. 1870, and No. 109, 8 Oct 1870

25. PANS MG 1, Vol. 151, RBP No. 110, 22 Oct. 1870.
26. PANS MG 1, Vol. 151, RBP No. 105, 13 Aug. 1870, where the cost cutting arrangements are first discussed. These plans were carried out in spite of Routledge's subsequent offer.
27. J.S. Martell, 'Early Coal Mining in Nova Scotia', p. 167. JHA (1845), Appendix 64 provides materials on the pressures leading to the leasing of Joggins. See I. McKay, 'Industry Work and Community in the Cumberland Coalfields, 1848–1927', (unpublished Ph.D. thesis, Dalhousie University, 1983), pp. 10–12 and H. Harrison, 'The Life and Death of the Cumberland Coal Mines', *Nova Scotia Historical Review*, (1985), pp. 73–83 for a discussion of GMA operations in Cumberland County.
28. JHA, various years, Mines Report.
29. JHA (1864), Appendix 18.

30 PANS, RGI, vol 460, No. 16.

31. See C.C. Spence, *British Investments and the American Mining Frontier, 1860–1901* (New York, 1958) where he refers to the tendency of British investors in American mines to demand a British Board of Directors.
32. PANS MGI, Vol. 151, RBP No. 3, 27 April 1866, discusses the store ship to be sent out. Mention of the Board's role in the purchase of equipment is common in these letters. The British location of the Board may have led to poor decisions regarding equipment upon occasion. In letter no. 7, 20 July 1866, Richard Brown Sr. notes that the Board will now see their mistake in having insisted in the purchase of a more expensive British dredger rather than a less expensive American machine he had recommended.
33. JHA (1859), Appendix 22.
34. H.N. Eavenson, *The First Century and a Quarter of the American Coal Industry* (Pittsburgh, 1942), p. 418 notes that of 2,994 bituminous coal companies operating in the United States in 1880 only 53 operated two mines, 15 more operated from three to five mines, one operated seven mines and one operated nine mines. The overwhelming pattern was for each company to operate only one mine.
35. See Table 1 for the output produced at each mine. A seam was also opened at Point Aconi in 1857 in the hopes that it would provide a suitable gas coal, but those hopes were disappointed, and the mine was not further developed. R Brown, *The Coal Fields and Coal Trade of the Island of Cape Breton* (1871), p. 90.
36. D. Frank, 'Richard Smith' *Canadian Dictionary of Biography*; PANS MG 1, Vol 151, passim.
37. PANS MG 1, Vol. 151, No. 105, 13 Aug. 1870.
38. PANS, MG 1, RBP Vol. 151, No. 79, 17 July 1869, refers to the initiation of a commission as part of the agents' compensation. In No. 184, 14 July 1873, R. Brown Sr. complains of the burden of the agents' salaries on the firm's profits
39. See, for example, JHA (1878), Appendix 6 where agents of coal mining companies are listed.
40. The Beaton Institute, University College Cape Breton, Nova Scotia (hereafter Beaton), MG 1419 D1a.
41. Beaton, MG 1419 D8a, Richard Smith to Rupert J. Cochran, 31 Aug. 1832, and Richard Smith to G.L Deblois and Co. 6 Sept 1832.

42 PANS MG 1, Vol. 151, No. 110, 22 Oct. 1870. Operating a farm may not have been unusual. St. Francis Xavier University in Antigonish supplied its dining hall from its own farm into the1930s.

43. O E. Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting* (New York, 1985), pp. 35–8.
44. PANS MG 1, Vol. 151, No. 354, 11 Nov. 1879, and No. 361, 21 Feb 1880, C.O. MacDonald, *The Coal and Iron Industry of Nova Scotia* (Halifax, 1909), pp. 46, 219–26.
45. The cost of moving Nova Scotian coal to market generally equalled or exceeded the price of the coal at the loading wharf Beaton, MG 1419 D8a, Richard Smith to Rupert J. Cochrane, 29 Sept 1832, and Richard Smith to Clark and Archibald, 7 Oct.

1833. The letter indicates the same freight rate ($3.50 per chaldron) to New York as to Boston. The rate to Philadelphia was $4.00. See also MacDonald, *The Coal and Iron Industry*, p. 65.

46. Williamson, *The Economic Institutions of Capitalism*, pp. 103–130 provides an excellent explanation for this pattern of integration.
47. C.K. Yearly Jr., *Enterprise and Anthracite: Economics and Democracy in Schuylkill County, 1820–1875* (Baltimore, 1961), pp.24–28. In the United States, the large railroad networks such as the Pennsylvania Railroad bought coal mines to guarantee their traffic. They did not maintain ownership, presumably because these companies were too large to be dependent on one source of traffic.
48. JHA (1884), Appendix 6
49. In 1875 the Inspector of Mines in Nova Scotia bemoaned the disadvantage the local industry suffered in the American market, because the tremendous variability of freight rates on sailing ships made it extremely difficult for local coal companies to sell on contract at a fixed price JHA (1875), Appendix 4. Firms did attempt to sell on contract. During the depressed conditions of 1870 Brown Sr. noted with surprise that the Glace Bay Mining Co. promised delivery at a fixed price in the United States, thus assuming the risk of variable freight rates. Whether such a practice was maintained is not indicated. PANS, MG 1, RBP, Vol.151, No. 100, 1 July, 1870; No.116, 25 March 1871. In 1881 the GMA itself hoped to win a contract to deliver coal to the Grand Trunk Railroad in Montreal at $3.60 per ton delivered. The means of transport is not indicated. PANS, MG 1, RBP, Vol. 151, No. 395, 10 Feb. 1881.
50. Gerriets, 'The Impact of the General Mining Association'. A volume discount in itself favoured Americans, since much coal sold in BNA was bought by ships' masters or by customers purchasing only limited amounts Although there is clear evidence that at some periods of time the discount was available only to Americans, at other times the discount was available to all who bought sufficient coal.
51. Chandler, *The Visible Hand*, p 11.
52. K.E Inwood, *The Canadian Charcoal Iron Industry. 1870–1914* (New York, 1986); Inwood, 'Productivity Growth in Obsolescence. Charcoal Iron Revisited' *Journal of Economic History*, Vol. 45 (1985) pp. 293–8; idem, 'Local Control, Resources and the Nova Scotia Steel and Coal Company', *Historical Papers* (1986), pp. 254–82.
53. P Temin, 'A New Look at Hunter's Hypothesis about the Antebellum Iron Industry', *American Economic Review*, Vol. 54 (1964), pp. 344–51, idem, *Iron and Steel in Nineteenth-Century America: An Economic Inquiry*, (Cambridge, MA 1964), pp. 51–80.
54. JHA (1864), Appendix 18 At this time only the Londonderry iron works was still in operation. Donald, *The Canadian Iron and Steel Industry*, pp. 55–9.
55. JHA (1864), Appendix 18. The mine inspector discusses the operation of each mine in 1863 in some detail. Although he is not concerned with managerial organisation, he names the proprietors and his discussion of the mining practices indicates that the owners, rather than managers, were very much involved in day-to-day mining operations. This is even the case with an American owner, Mr Belloni of New York, who owned the Block House Colliery in Cape Breton. Here the inspector explicitly states that the owner 'has assumed the management personally'.
56. Cameron, *Pictonian Colliers*, p 34
57. Ibid., p. 48.
58. S A. Saunders, 'The Reciprocity Treaty of 1854: A Regional Study', *The Canadian Journal of Economics and Political Science*, Vol 2 (1936), pp 47–8.
59. JHA (1878), Appendix 6
60. PANS, MGI, RBP, Vol 151, No 91, 1 Jan 1870; No. 105, 13 Aug 1870, and No 111, 5 Nov. 1870.
61. PANS, MGI, RBP Vol. 151, No. 136, 8 Sept. 1871 See also No. 107, 10 Sept 1870 regarding comments on the competence of the agents.
62. The firm had a Boston agent in the 1830s, Deblois, but apparently the Halifax agency had come to be relied on to market coal in all regions. Beaton, MG 1419 D8a, Richard Smith to G S Deblois and Co., 1832–33 passim

63. PANS, MGl, Vol. 151, No. 1, 19 Jan. 1866.
64. PANS, MGl, RBP Vol. 151, No. 105, 13 Aug. 1870; No. 112, 19 Nov. 1870.
65. PANS, MG1, RBP Vol. 151, No. 132, 13 July 1871.
66. MacDonald, *The Coal and Iron Industry*, p. 171.
67. PANS, MG1, Vol. 151, No. 175, 25 Feb. 1873.
68. JHA (1971), Appendix 14. Under the management of the new owners, the mine suffered another explosion in 1880 which resulted in extensive loss of life as well as destruction of capital.
69. D. Frank, 'The Cape Breton Coal Industry and the Rise and Fall of the British Empire Steel Corporation', *Acadiensis*, Vol. 7 (1977), pp. 8–9. See J.N. McDougall, *Fuels and the National Policy* (Toronto, 1982), pp. 23–31 for a discussion of the debate on the tariff. The duty was raised to $0.60 per ton in 1880 although anthracite was allowed free entry in 1887. It was reduced to $0.53 in 1897 and remained at that level for decades in site of rising coal prices. See JHA, Mines Reports, various years for quantities produced.
70. McKay, thesis, p. 96–104.
71. In spite of its name, Cameron's description of this company's operations and properties gives little evidence of iron works or other manufactories. *Pictonian Colliers*, p. 71–3.
72. PANS, MGl, Vol. 152, No 194 Swann to Richard H. Brown Jr., 16 Dec. 1893 and No. 197 Richard H. Brown Jr. to Charles Brown, 7 May 1895.
73. D. Frank, 'The Cape Breton Coal Industry', pp. 3–34; D. MacGillivray, 'Henry Melville Whitney Comes to Cape Breton', pp.52–68.
74. MacGillivray, 'Henry Melville Whitney', pp. 52–68.
75. MacGillivray, 'Henry Melville Whitney'.
76. JHA (1901), Mines Report.
77. Frank, 'The Cape Breton Coal Industry', p. 12.
78. Ibid.
79. L.D. McCann, 'The Mercantile-Industrial Transition in the Metals Towns of Pictou County, 1857-1931', *Acadiensis*, Vol. 10 (1981), p. 44.
80. They purchased the ore deposit for $5,000 and sold a portion to Dominion for $1,000,000. Nonetheless the sale may not have been favourable to the company since they soon discovered that they had alienated the best quality of ore to a competitor and had to purchase submarine deposits at the same site. McCann, 'The Mercantile Industrial Transition', pp 50–1. Before making its investments, the Nova Scotia Steel Co. had experimented with smelting Newfoundland iron ore with Dominion coal, and Whitney's interest in the steel industry was doubtless encouraged by these experiments.
81. McCann, 'The Mercantile-Industrial Transition', p. 62 and Kris Inwood, 'Local Control, Resources and the Nova Scotia Steel and Coal Company', *Historical Papers* (1986), p. 258.
82. Many Nova Scotian coal companies were controlled in Montreal or Toronto. While technically not constituting foreign ownership, in the context of Nova Scotia, such control was in fact very nearly as foreign as Boston or New York ownership.

TABLE 1

SALES OF COAL BY NOVA SCOTIAN MINES FROM 1827 TO 1903
(gross tons)

	Sales by Mines First Opened by the GMA							Sales by Other Firms	Provincial Total
	Joggins	Bridge-port	Albion	Bras d'Or	Sydney	Lingan	Total GMA†		
1827			101		12,032		12,132		2,132
1828			6,154		14,375		20,530		20,530
1829		1,621	7,532		13,866		23,019		23,019
1830		4,287	8,378		16,668		29,333		29,333
1831		4,830	11,189		20,896		36,915		36,915
1832		15,254	16,458		27,938		59,651		59,651
1833		13,496	26,202	1,417	20,000		61,116		61,116
1834		9,993	19,398	171	16,254		45,816		45,816
1835		11,642	23,708	67	21,255		56,672		56,672
1836		17,321	48,916	132	43,313		109,682		109,682
1837		18,208	47,726	1,974	48,658		116,567		116,567
1838		18,127	45,626	395	38,746		102,894		102,894
1839		17,912	61,905	87	61,354		141,257		141,257
1840		12,480	33,387	92	52,399		98,358		98,358
1841		6,367	62,905	70	68,264		137,606		137,606
1842		126	49,462	241	70,101		119,930		119,930
1843		148	34,490	151	67,931		102,721		102,721
1844		230	39,679	132	65,694		105,734		105,734
1845		2,414	69,222	1,515	72,470		145,620		145,620
1846		375	77,154	764	63,731		142,024		142,024
1847		370	114,741	535	77,829		193,474		193,474
1848	1,252	244	103,552	582	74,505		180,135		180,135
1849	2,582	45	90,507	566	74,150		167,849		167,849
1850	3,402		95,981		73,494		172,878		172,878

TABLE 1 CONTINUED

1851	3,702	74,830	69,364		147,896		147,896
1852	5,034	97,644	78,809		181,488		181,488
1853	5,589	125,264	77,218		208,071		208,071
1854	8,448	117,538	98,994	333	225,313		225,313
1855	5,681	129,343	88,452	5,034	228,511		228,511
1856	8,092	124,984	98,412	9,167	240,654		240,654
1857	7,241	149,226	116,071	9,878	282,416		282,416
1858	3,632	114,952	100,668	4,943	224,194	2,325	226,519
1859	3,593	138,761	109,581	9,300	261,235	6,757	267,992
1860	8,321	166,945	117,613	16,299	309,178	11,688	320,866
1861	5,296	165,056	100,459	35,301	306,111	20,323	326,434
1862	3,347	201,742	111,681	34,203	350,973	44,662	395,635
1863	4,648	198,313	104,373	36,058	343,392	85,959	429,351
1864	7,296	225,776	88,025	44,372	365,469	221,621	587,061
1865	9,208	192,147	105,534	55,374	362,263	270,697	631,095
1866	8,148	169,717	109,167	50,551	337,583	220,937	558,520
1867	8,745	121,220	103,306	37,151	270,422	200,763	471,185
1868	8,238	105,636	97,471	20,737	232,081	221,543	453,625
1869	7,095	86,530	95,733	30,378	219,736	292,059	511,795
1870	6,822	79,240	108,952	27,744	222,758	345,519	568,277
1871	10,414*	77,133	105,494	21,940	204,567	381,438	596,419
1872	12,191*	98,865*	102,691	38,504	240,060	533,664	785,914
1873	19,241*	107,253*	103,123	26,067	129,190	625,422	881,106
1874	17,434*	110,431*	72,552	13,253	85,805	535,457	749,127
1875	47,048*	115,488*	92,829	25,673	118,502	425,757	706,795
1876	12,491*	120,527*	70,636	16,533	87,169	414,020	634,207
1877	10,233*	110,082*	88,087	19,130	107,217	459,533	687,065
1878	9,640*	122,117*	106,366	11,527	117,893	443,861	693,511
1879	8,059*	131,420*	108,259	10,220	118,479	425,666	683,624
1880	11,201*	184,151*	115,307	27,897	143,204	811,455	954,659
1881	15,873*	51,645*	133,135	32,376	165,511	869,503	1,035,014

TABLE 1 CONTINUED

	Sales by Mines First Opened by the GMA							Sales by Other Firms	Provincial Total
	Joggins	Bridge-port	Albion	Bras d'Or	Sydney	Lingan	Total GMA[†]		
1882	18,396*		122,469*		33,623	64	133,687	1,116,492	1,250,179
1883	21,269*		148,785*		131,673	12,918	144,591	1,152,932	1,297,523
1884	22,789*		175,201*		131,393	20,871	152,264	1,109,386	1,261,650
1885	14,630*		114,061*		103,917	18,867	122,784	1,131,726	1,254,510
1886	18,797*		60,496*		119,949	15,058	135,007	1,238,659	1,373,666
1887	13,386*				145,210		145,210	1,374,474	1,519,684
1888	43,253*				126,896		126,896	1,449,796	1,576,692
1889	37,935*				123,902		123,902	1,431,205	1,555,107
1890	53,409*				150,468		150,468	1,635,643	1,786,111
1891	53,872*				146,645		146,645	1,703,300	1,849,945
1892	58,535*				164,078		164,078	1,588,856	1,752,934
1893	64,206*				147,913		147,913	1,338,011	1,485,924
1894	81,717*				220,082		220,082	1,799,660	2,019,742
1895	95,076*				221,896		221,896	1,609,461	1,831,357
1896	51,360*				228,099		228,099	1,819,034	2,047,133
1897	72,537*				229,849		229,849	1,783,572	2,013,421
1898	64,113*				243,638		243,638	1,891,759	2,135,397
1899	58,726*				245,884		245,884	2,173,253	2,419,137
1900	55,456*				225,887		225,887	2,771,659	2,997,546
1901	53,352*				184,303*			2,935,032	3,119,335
1902	46,968*				186,539*			3,712,087	3,898,626
1903	38,768*				345,492*			4,275,582	4,621,074

Notes: [†] Includes only the output of mines owned by the GMA in each year.
* Mine no longer owned by the GMA.

Sources: 'Mines Report', JHA, various years.

From Branch Operation to Integrated Subsidiary: The Reorganisation of Imperial Oil under Walter Teagle, 1911–17

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Few countries have had as long or as varied an experience with foreign direct investment as Canada, and not coincidentally few have featured as vigorous a debate over the social and political as well as economic consequences of foreign direct investment. The territorial and political dimensions of Canada were shaped in no small measure by the activities of English and French ventures in the North Atlantic fisheries, the fur trade and the forests of North America in the three centuries before Confederation in 1867. Over the next hundred years British and, to an increasing extent, American enterprises moved steadily into the Canadian mining and manufacturing. Although some fields, notably transportation, banking and financial services, remained largely in Canadian hands, foreign ownership was a significant feature of the nation's industrial landscape, overwhelmingly so in such areas as automobiles, chemicals, electrical equipment and defence materials.

Until well after the Second World War most Canadians welcomed this inflow of foreign investment as essential for the economic growth of a country with a small population and limited domestic capital resources. The presence of subsidiaries of American and British manufacturers enabled Canadians to benefit from the latest advances in technology and kept jobs at home. By the 1960s, however, a less sanguine view of the impact of foreign direct investment began to emerge. Focusing initially on the perceived foreign domination in secondary manufacturing, these critics argued that the presence of multinationals in Canada suffocated domestic entrepreneurship, and created a 'branch plant economy' characterised by inefficient plants with short production runs, outmoded technologies and restrictions on export capabilities.While these assertions were the subject of considerable controversy among Canadian academics and government policy-makers, they commanded sufficient public support to induce the federal government to establish a Foreign Investment Review Agency in 1974.[1]

By this time the energy crisis precipitated by the Arab oil embargo of October 1973 had shifted the attention of Canadian critics of multinationals to the petroleum industry, where subsidiaries of large foreign corporations controlled over two-thirds of the assets and dominated the refining, distribution and marketing of oil and gas in the country as well as the production of crude oil, centred largely in the oil fields of Alberta. Alarm over the control by foreign interests of a 'national resource' led to the establishment of a government corporation, Petro-Canada, in 1974 and in the early 1980s to a short-lived 'National Energy Policy' intended in part to 're-Canadianise' the oil industry by establishing restrictions on exports of petroleum products and mandating Petro-Canada to acquire some foreign-owned firms in the industry.[2]

In the context of this controversy over foreign ownership in Canada, and particularly in the energy sector, Imperial Oil presented a logical target for criticism. The largest integrated oil and gas company in Canada, with 24 subsidiaries engaged in operations ranging from retail gasoline distribution and petrochemical production to heavy oil extraction and Arctic exploration, Imperial as a 70 per cent subsidiary of Exxon Corporation was also the largest foreign-owned company in the country measured in terms of assets in the early 1980s, and third largest in terms of sales. Although never a serious candidate for nationalisation, Imperial had long been a symbol of foreign domination of Canada's economy, alternatively – and sometimes simultaneously – charged with arrogance and complacency, excessive political influence, ruthless aggression against competitors, exploitation of the consumer and abject subservience to the global aims of its American masters.

While academic critics of Imperial avoided the more hyperbolic charges against the company, their portrayal of the parent–subsidiary relationship emphasised the extent of Exxon's controlling role. Michael Bliss, a leading Canadian business historian, characterised Imperial as 'a completely unautonomous Canadian branch' of Standard Oil, at least in the early twentieth century.[3] David Crane, assessing Imperial in the early 1980s, acknowledged that the company had 'greater autonomy than many other Exxon affiliates', if only because of the presence of Canadian minority shareholders; but also asserted that 'everything of importance that Imperial does . . . is discussed with Exxon', and that 'senior management at Imperial tends to identify strongly with the multinational'.[4]

Determining the character of a parent–subsidiary relationship in a business organisation (or indeed any large organisation), in particular in the context of a term as ambiguous as autonomy is a difficult task; and assessing this relationship in a multinational setting is even more challenging. The literature on this subject is large and diverse, and the complexities of this issue can only be touched upon here. At the simplest level, there is Crane's view that correlates the degree of control by the parent firm to the extent of ownership. But this point assumes an active role on the part of minority shareholders in the subsidiary, which is not always the case; and there are instances in which a subsidiary with little or no minority representation on its board has exercised autonomy in management decisions due to a variety of factors, such as the policies of the parent firm toward decentralisation, divisions among the directors or senior management of the parent firm, and legal and political constraints imposed by host governments on foreign investment.[5] Parent–subsidiary relationships may also undergo evolution over time as the particular economic and political circumstances vary, and the strategies of the parent firm or capabilities of the subsidiary change.[6]

This paper examines the history of Imperial Oil, focusing on the first two decades of the twentieth century, looking particularly at the structure of the company's refining and marketing operations, and the relationship between Imperial and Standard Oil (New Jersey) in the framework of the issues discussed above. During this period Imperial went through two critically different phases: from 1899 to 1911 the company was little more than a legally distinct entity; its refining operations were controlled by Standard Oil (New York) and its marketing and sales were co-ordinated through the headquarters of the Standard Oil system in New York City. Between 1912 and 1917 the company was almost entirely restructured, emerging as an integrated organisation with expanded refining capacity, a national marketing network, a foreign subsidiary producing crude oil in South America, and a much enlarged capital base. This transformation was carried out under the leadership of Walter Teagle, who later became president of Jersey Standard, Imperial's parent company.

The Teagle era thus marked a crucial period in the history of Imperial and its relationship with the American parent firm. The legacy of the Teagle era, however, is somewhat ambiguous. On the one hand, Imperial gained a substantial degree of independence within Jersey Standard's international framework; yet the links between the Canadian firm and its parent remained very tight, and in many respects the reforms of that era continue to define the nature of Imperial Oil and its relationship with Exxon to the present.

I

During the 1850s gum beds in western Ontario attracted local and American oil seekers. In 1860 a group from Hamilton, Ontario set up a Canadian Oil Co. which drew a modest output of 600 to 800 gallons per day of crude and operated a refinery to manufacture kerosene at Oil Springs. By the end of the decade more productive fields had been developed at Petrolia, north of Oil Springs; and nearby London, Ontario had become a centre for refining. Between 1862 and 1864 the government of Canada (which at that time included only Ontario and Quebec) imposed import duties on kerosene and other refined oil products to boost the local industry; and these measures were extended to cover the other provinces of the new Confederation in 1867.[7]

As in the United States, problems of control of output and pricing preoccupied both crude oil producers and refiners in Ontario, and various cartels emerged and collapsed during the 1860s and 1870s. A more sustained effort at control was undertaken by the London, Ontario refiners after 1876 under the leadership of Jacob Englehart, who had emigrated from the American refining capital of Cleveland, Ohio, and was vigorously promoting Canadian exports to the United States. When the Canadian government increased duties on oil imports under the 'National Policy' in 1879, the London group set out to exploit the situation. Like Rockefeller's organisation in Cleveland, the London refiners determined to establish control of the industry in Canada through a joint-stock enterprise that would acquire all the refining capacity and ultimately control the crude oil output from Petrolia. In 1880 they established the Imperial Oil Co. Ltd. with an authorised capital of $500,000.[8]

Englehart and his partners exercised close control over the company over the next 18 years. In the early years of the enterprise this tightly knit structure proved beneficial: after an initial distribution of dividends in 1881–82, the company retained its earnings to pay off its initial capital costs and finance expansion of its sales network. The refineries were consolidated at Petrolia, and there was little expansion of capacity before 1894. Over the longer term, however, the continuing concentration of ownership limited Imperial's financial capabilities, particularly in the 1890s when the challenge of American competition required new capital outlays.[9] Imperial faced more chronic and deep-seated technical problems which were never completely resolved in the pre-Standard Oil era. Although output from the Petrolia fields was sufficient to meet Canadian demand in the early 1880s, the long term outlook for Ontario production was poor and had begun to decline by the end of the decade. By 1893 Imperial's distributing subsidiary in Toronto began buying refined oil from the Americans to cover its shortfall.[10]

Even more troubling was the quality of Imperial's oil. The Ontario product contained exceptionally high levels of sulphur: 'skunk oil' was the graphic term applied by consumers to the Petrolia product, and in the early years of Imperial it was banned from British docks. The company devoted much attention to the problem: a promising approach was being developed by Hermann Frasch, a German-born chemist who had emigrated to Cleveland in the 1880s. Englehart recruited Frasch in 1883 and even made him an Imperial director; but the mercurial chemist departed two years later with his process essential to its own survival.[11]

Despite these obstacles Imperial performed well in the first decade of its operations; and as late as 1897 continued to control more than half of the Canadian market in kerosene and other refined products. During the early 1880s the company focused on Ontario and the prairies. By 1888 Imperial had established branch sales offices in Montreal and St. John, New Brunswick and set up a Toronto subsidiary to sell its products directly to retailers.

While Imperial was advancing westward from Ontario and probing more tentatively into eastern Canada, Standard Oil – more precisely, Standard of New York – was entering the market from the east and south. In 1888 when Imperial set up a branch operation in the Maritimes, a Standard subsidiary, Eastern Oil Co., established a bulk storage facility at Halifax. For Imperial this move posed a serious threat since Standard's transport costs to the Maritimes were cheaper, and the new company was integrated into Standard (NY)'s well developed domestic sales division.

Two years later Standard established a second beachhead, the Bushnell Co., in Montreal to market Standard products. By 1896 Bushnell had established refineries at Petrolia and nearby Sarnia, Ontario on Lake Huron. As Imperial's historian, John Ewing, observes, Bushnell 'was the skeleton upon which the flesh of a large united Standard Oil organisation in Canada came close to being hung'.[12] Of particular concern to Imperial was the fact that Bushnell had access through Standard (NY) to the Frasch process. Also in 1896 a third subsidiary, Queen City Oil Co., emerged in Toronto, challenging Imperial in its own heartland, supplied by Standard (NY)'s Buffalo refinery.[13]

By the mid-1890s, then, Imperial confronted a concert of competitors, all linked to Standard Oil. Although the situation could be considered a stalemate with Imperial dominant on the prairies, the Standard companies strong in eastern Canada and the two or more or less equal terms in Ontario, the long term advantages clearly lay with the Americans who had the capital resources and technology ultimately to subdue Imperial. Although the event may have been coincidental, the election of a new Canadian government in 1896 set the stage for the merger.

Imperial Oil had emerged in the wake of the 'National Policy' tariffs which helped the company to hold its central market in Ontario against the Americans. Although the Liberal party under Wilfrid Laurier had retreated from open endorsement of 'free trade' in the 1896 election, the new government did undertake a review of the petroleum tariffs in the following year, and lobbyists for both sides mobilised. The Standard Oil spokesmen posed as representatives of consumers and retailers against inefficient and complacent domestic refiners and wholesalers. Imperial's partisans warned of the Standard 'octopus' and the American threat to Canada's sovereignty. In the end the Laurier government moved cautiously, allowing the importation of refined oil in tank steamers and reducing duties on kerosene and lubricants.[14]

These hesitant steps away from protectionism provided a signal that even the legal props in Imperial's competitive bulwark were crumbling. The company had already determined in 1895 that a major new infusion of capital was needed to expand refinery capacity and purchase steamers to handle its increased flow of imported crude oil, but the Canadian banks were reluctant to extend further credit; the company had already borrowed heavily in 1894 to cover the costs of refinery expansion. During 1896 Imperial sought to interest a British company, Colonial Oil, in a merger or sale, but the talks broke down in April 1898. One month later Imperial began negotiating with Standard Oil.

Since the prevailing myth in Canada is that Standard Oil 'gobbled up' Imperial, it is perhaps worth underlining that Imperial initiated the process, although by that point the Canadian enterprise had very little room for manoeuvre and faced the prospect of a ruinous struggle with the Standard affiliates. Standard could certainly have erected an integrated firm around Bushnell, so that the Standard historians, Ralph and Muriel Hidy, may not have been ingenuous when they explained Standard's motives: 'Instead of antagonising proud Canadians by hard competition with a Canadian firm, Standard Oil could bring Imperial into its own family'.[15] There was another factor: Imperial's charter was extremely liberal, permitting distribution across Canada and exploration for new crude oil sources. Imperial's owners in 1880–98 did not pursue this route, but it was a circumstance that helped form Teagle's strategy for the company.

For Imperial's directors and shareholders the benefits of the merger were quickly apparent. Standard Oil paid $339,470 for 75 per cent of the stock. The 'old' shareholders also received 25 per cent of the shares in the new company capitalised at $1 million that absorbed the other Standard subsidiaries and they received a one-time dividend outlay of $93,000. Three of the directors of the 'old' Imperial were on the new seven-man board while W.A. Barstow of Bushnell Co. became president. The reorganised Imperial Oil Co. Ltd. commenced operations from its new headquarters in Sarnia, Ontario in January 1899.[16]

II

During the decade that followed the Standard takeover, Imperial's minority Canadian shareholders (not to mention the parent firm) continued to reap handsome financial rewards. Dividends were 'regular and fat' even though gross income declined by 16 per cent between 1899 and 1904. Sales volume increased from 1905 to 1910, due in part to the growth of the western Canadian market during the 'Laurier boom' and also because of the removal of duties on crude and refined petroleum imports after 1904, which enabled Standard to bring in more low-cost supplies to replace the declining output of Petrolia. A new stock issue of 30,000 shares was made in 1907, restricted to existing shareholders, and dividends doubled between 1907 and 1911.[17]

But while Imperial was a generous source of income to its owners, the company scarcely existed as a working organisation. The board meetings were perfunctory affairs – Barstow only presided at one session in eight years – and the Canadian directors had little to do with running the enterprise. The real management of Imperial from 1899 to 1911 was exercised by Horace Chamberlain, who was supervisor of the Buffalo, New York refinery of Standard Oil (NY) as well. In 1907 Chamberlain succeeded Barstow as president while retaining his Buffalo position. 'An imposing figure of autocratic appearance and manner', Chamberlain made it clear that Imperial ranked low on his list of managerial priorities. His first act following the merger was to close down all of Imperial's refineries except the Bushnell works at Sarnia. While the closure of the Petrolia refinery was probably justified in view of the declining output of the field there, the peremptory nature of the action and the layoffs that followed rankled the former Canadian directors. One of the them, William Pratt, rather disingenuously asserted that, 'if we had known they were going to close the refinery, we would never have sold'.[18] Pratt's outrage, however, did not lead him to sell his shares in Imperial.

Chamberlain removed all the production records and general office accounts to Buffalo and monitored the Sarnia operation through the local superintendent, Charles Stillman. After 1904, when Canadian duties on imported crude were removed, Chamberlain established a fleet of lake barges and purchased a tank steamer for Imperial. He also sought to have the Sarnia refinery expanded, arguing that an enlarged works could supply the Maritime provinces; but H.C. Folger of Standard's manufacturing committee over-ruled this proposal on the grounds that Standard (NY) could continue to supply that region more efficiently.

Meanwhile, Imperial's marketing and sales operation was completely reorganised to assimilate it into Standard's American sales system. The Canadian market was divided into three regions – the West, Ontario, and the East – and each was assigned to a regional manager who co-ordinated sales through the local agencies but reported directly to New York rather than to Sarnia. As in the case of refinery consolidation, this peculiar arrangement could be justified since Imperial's customers were increasingly dependent on supplies from various Standard affiliates in the United States. The system worked effectively before 1911: western regional sales in particular expanded under the aggressive direction of a transplanted New Yorker, H.J. Guthrie, who became an early advocate of the move into motor fuels and lubricants and set up a chain of Imperial fuel stations across the prairies. But the arrangement was symptomatic of Imperial's status as a functioning enterprise in name only.[19]

From Standard's perspective the steps taken between 1899 and 1904 that effectively dismantled Imperial as an integrated organisation were commercially justified. But they also confirmed Canadian suspicions of the Standard 'octopus' and left Imperial vulnerable to the onslaught of a determined competitor. It could be argued, from the point of view of critics of multinational enterprises, that the history of Imperial Oil in this period provides a classic example of the consequences of foreign domination of a national industry. As an operating entity, Imperial was almost wholly assimilated into Standard's continental manufacturing and marketing structure, and its potential capital sources from retained earnings were drained away in hefty dividends and 'loans' to the parent firm.[20]

Could Imperial have survived as an independent firm after 1899, and as an 'integrated' enterprise have been better prepared for foreign competition in 1911? Imperial's basic problem in the 1890s was that its major source of crude oil, Petrolia, was drying up: by 1911 output was less than 300,000 barrels per year, and the company had no other readily available sources. The key technology, the Frasch process, was in the hands of its rival: Imperial did not acquire patent rights until after the Standard takeover. Tariff reduction was supported not just by Standard's lobbyists but by Canadian consumers generally by the turn of the century, and Imperial would have ultimately been obliged to join their ranks. In the long run Imperial would have become dependent on foreign suppliers and it is difficult to see how it could have survived as an integrated operation under these circumstances. In any event, as part of a larger multinational organisation, Imperial in 1911 did have access to a reliable supply of refined oil, and the capital and technological resources that were required to survive – once the parent firm reassessed its own strategy and Imperial's role in that strategy.

III

The impetus for that reassessment proceeded from two events. First, in 1911 Imperial faced a serious challenge in the Canadian market with the establishment of a subsidiary of Royal Dutch Shell, which like Standard was an integrated firm with substantial capital resources and oil reserves. With its limited refining capacity and ungainly marketing system, Imperial was ill-prepared to compete with an international player like Shell.

Compounding the problem was the dissolution decree imposed on Standard Oil for violations of the Sherman Act sustained by the United States Supreme Court in May 1911. The court's decree required a major restructuring of the entire Standard Oil system and inevitably had sweeping implications for Imperial Oil, given the complex inter-linkages of the Canadian firm with other Standard subsidiaries that had been fashioned after 1899. Standard Oil (NJ), Imperial's new parent firm under the reorganisation, had lost most of its sources of crude oil, upon which Imperial relied. Imperial's refining operations were effectively under the control of Standard Oil (NY), now a separate entity. Imperial's marketing operation was supervised from the New York City, headquarters at 26 Broadway, but was interlinked with other Standard companies across the United States. Disentangling Imperial from this web of corporate relationships would be a formidable task.

Standard officials agreed that at the very least the American directors who were not Jersey Standard employees should resign from Imperial's board to demonstrate an arm's-length relationship between Imperial and the old Standard Trust. In December 1911 Chamberlain and two other Standard (NY) representatives vacated their seats, and two of Imperial's regional marketing managers, Guthrie and G.D. Kilpin, joined Charles Stillman, the Sarnia manager, as Imperial directors.[21] The next decision was to choose a successor to Chamberlain as president. Apparently Jersey Standard considered Guthrie, Imperial's aggressive western sales co-ordinator, for the position; but this plan was shelved as a more ambitious role for Imperial took shape at 26 Broadway.

According to Walter Teagle's biographers, his selection to be president of Imperial came about more or less accidentally. During discussions by the Jersey Standard board of the consequences of dissolution one of the directors 'half-humorously' suggested to Teagle, newly ensconced as a vice-president in charge of exports, that he take on Imperial in addition to his other duties. Teagle agreed, and although his other tasks prevented him from assuming the presidency of Imperial formally until January 1914, he was indirectly involved in the Canadian company's affairs from December 1911.[22]

Teagle was one of the most promising of Standard's younger generation of professional managers when he assumed direction of Imperial. Only 33 in 1911, Teagle was the son of a Cleveland oilman; he had started out as an independent sales agent and then headed a Standard subsidiary, Republic Oil, before moving to Standard's export trade department in 1903. Within seven years he had become a vice-president and director of the company, touted as 'the boy picked to fill John D.'s shoes' – as indeed he did in 1917, succeeding John Archbold as president of Jersey Standard.[23] The decision to make Teagle president of Imperial thus represented a promotion for Imperial in the Standard system rather than a promotion for Teagle.

In the light of subsequent developments it would appear that Teagle's selection was not completely accidental. As a veteran of Standard's export wars, Teagle was well situated to assess the best means of meeting Shell's invasion of North America. Equally important was the problem of Jersey Standard's legal relationship with its foreign producing affiliates in Romania and Latin America as well as its overseas marketing agencies. In 1911–12 the American company was concerned over future anti-trust investigations of its international operations, and concluded that the safest course would be to transfer legal control of these properties to a foreign entity. Canada may also have been seen as a tax haven: in 1909 the US Congress had enacted the first peacetime corporate income tax. Imperial offered the safety of a legally external domicile with physical proximity to 26 Broadway. Although Teagle initially established his command post in England to deal with European marketing problems, he maintained regular communications with W.J. Hanna, Imperial's legal counsel, and when war broke out in Europe in 1914, Teagle moved to Canada where he continued to function as Jersey's chief policy-maker on foreign trade and investments as well as president of Imperial.[24]

Even before Teagle's formal installation at Imperial, his influence was being felt, and his connections with the higher echelons at 26 Broadway were benefitting the Canadian company. Shortly before his departure as

Imperial's president, Chamberlain had renewed his call for enlargement of the Sarnia refinery, and Teagle supported this step, also advocating expansion of the lake fleet to four steamers. Jersey's board agreed in principle, but Imperial needed working capital to finance expansion. Imperial still had $2 million in unsubscribed authorised capital (authorised capital had been increased to $6 million in 1907), but Jersey was reluctant to take up the shares necessary to maintain its proportion. Hanna and Chamberlain persuaded Teagle to support the issue and he in turn persuaded Jersey Standard.[25]

By the end of 1912 Imperial had exhausted this source and sought new financing. Teagle again sent his endorsement from England, and Imperial secured approval to increase authorised capital to $15 million; Imperial's directors were empowered to issue new stock as required. In 1915 authorised capital was increased to $50 million, and in 1917 the company was financially reorganised: Imperial Oil Ltd. was established as a $50 million operating company wholly owned by Imperial Oil Co. Ltd.[26]

Meanwhile, major organisational changes were introduced in refining and marketing operations. The capacity of Imperial's Sarnia refinery was expanded from 5,000 barrels a day to 13,000 barrels a day, and a pipeline was built to link Sarnia to Standard's Cygnet, Ohio field so that Imperial was able to directly supply all of Canada outside the Maritimes. Refining capacity was increased again with the construction of refineries at Vancouver, B C in 1914; Montreal in 1916; and Halifax in 1918. When Chamberlain departed, Sarnia also regained control of its refinery accounts and company books were held thereafter at Imperial's new headquarters in Toronto.

The marketing system was also completely overhauled between 1912 and 1915. The New York office and the three regional positions were eliminated. In their place a new central sales division was set up in Toronto with branch offices in every major city and town across Canada. Although the old commission agents were retained, they were absorbed into the new divisional organisation. After Teagle's formal installation as president this process was accelerated under his sales vice-president, G.W. Mayer. Mayer moved sales managers frequently to break down the traditional system in which commission agents had established long-term relationships with customers – sometimes inducing them to set up their own independent operations. Mayer's office also tightened up on credit collections, another departure from the easygoing past. Teagle and Mayer emphasised advertising and public relations: in 1914 Imperial was the first Standard company to make a promotional film; and the company issued specialised publications for its salesmen, and in 1917 brought out the *Imperial Oil Review* for employees and shareholders.[27]

Although Guthrie had been an early advocate of motor fuels, Imperial continued to concentrate on kerosene production when Teagle arrived in Toronto. As president he encouraged diversification into motor fuels and lubricants, and expanded the fuel stations across the country. By 1918 there were over 700 stations: over half the total were in the Canadian West.[28]

With the increase in capacity, Imperial's sales volume rose from $17 million in 1912 to $27 million in 1917; and Mayer's tough policies on marketing overhead costs and credit sales together with improvements in the scale and efficiency of the Sarnia refinery increased net earnings from $2.6 million in 1912 to $7.4 million in 1917.[29]

With the rapid decline in Petrolia's crude oil output, Imperial was becoming increasingly dependent on supplies from other sources in the Jersey Standard system; but the parent firm faced similar problems since the dissolution decree had left it with substantial refining capacity but few proved reserves of crude oil. Here again, an initiative from Shell propelled Imperial and Jersey Standard to pursue a course that would be mutually beneficial in the long term. In 1915 Teagle learned that Shell was negotiating with the Canadian government for access to petroleum rights on Crown lands in the western Canadian province of Alberta. A hurriedly-assembled survey of Alberta's oil prospects by Jersey Standard explorers was pessimistic, but Teagle was persistent. Imperial was at a disadvantage in the situation since Canadian law barred companies that were not Canadian or British-owned from Crown lands. But there was an alternative: the Canadian Pacific Railway which controlled large tracts of western land was interested in leasing mineral rights and had no such restrictions.

In 1917 Teagle began negotiations with the CPR for petroleum concessions in the west, and Imperial established a subsidiary, the North West Co. Ltd., under the direction of A.M. McQueen, a Jersey Standard geologist who also joined Imperial's board of directors. Although Teagle had moved on to New York before an agreement was completed in 1919, he continued to press for western exploration, prodded by the arrival of a rival British consortion, Whitehall Petroleum, in Alberta. In 1920 Imperial began picking up more concessions in the Turner Valley south-west of Calgary, and McQueen initiated drilling operations in 1922. Imperial also opened a small field at Norman Wells in the North-west Territories in the 1920s, but determined that it was too remote from the market to be cost-effective.

Output from the western Canadian fields was modest in the 1920s and further exploration tailed off during the Depression. But Imperial's quest for concessions laid the groundwork for the development of a major source of oil after the Second World War. After spending over $18 million on exploration in the west, Imperial finally struck a gusher at Leduc, Alberta in 1947 initiating the great oil boom in western Canada.[30]

While the development of new domestic sources of crude oil lay in the distant future, Imperial acquired a producing subsidiary in South America in 1913. In this situation, however, Imperial played the role of surrogate for Jersey Standard. After the 1911 dissolution, Imperial's American parent had begun scouting Latin America for readily accessible fields. Fortuitously, in 1913 while he was still in England, Teagle was approached by agents of the estate of William Keswick who held a block of shares in the London & Pacific Petroleum Co. that had an oil concession and modest producing operations in Peru. There were, however, two problems: the other British directors were reluctant to sell out to the notorious American behemoth; and Jersey Standard's executives were nervous about anti-trust probes that might accompany further expansion. Imperial was ideally suited to cover the acquisition and the move fit in nicely with Teagle's idea of using Imperial as a base for Jersey Standard's overseas operations. In August 1913, Hanna arranged for the chartering of the International Petroleum Co. Ltd. as a subsidiary of Imperial that took over the London & Pacific Co. and three other fields in Peru.[31]

In the short run the Peruvian operation proved to be more of a burden than a benefit to Imperial and Jersey Standard. Labour problems were endemic in the fields, and in 1915 the government of Peru imposed a mining tax and export tax on the concession that led to prolonged controversy with the foreign company. At one point, after Teagle's departure for 26 Broadway, Imperial threatened to close down the fields rather than meet the government's terms. By the 1920s, however, the situation had improved and International Petroleum expanded its production, also taking over a Colombian venture, the Tropical Oil Co. Here again Imperial proved to be a handy surrogate, enabling Jersey Standard to circumvent anti-American sentiments in Colombia that reflected lingering resentment over the loss of Panama.[32]

Although International Petroleum was technically an Imperial subsidiary, the company was principally intended to serve Jersey Standard's requirements. This point was made clear in 1914 as all correspondence relating to the Peruvian venture was routed through New York rather than Toronto. Another Jersey Standard subsidiary,West India Oil Co., handled the distribution and marketing of International's products in Latin America, and a portion of the Peruvian light crude oils, used primarily for automobile fuel, went to Standard's refinery in New Jersey. But Imperial did get a share of this output, which was refined in Vancouver and provided a major source of Imperial's automobile fuel for distribution in its growing chain of service stations in western Canada. The acquisition of new sources of crude oil, although modest in value, from South America and Alberta in the 1920s, helped justify enlargement of Imperial's refining capacity and made it, at least potentially, a virtually integrated organisation.

IV

According to Imperial's historian, John Ewing, 'Teagle . . . took Imperial from the vassalage in which it had been since 1898 and gave it at least the status of a freed man'.[33] Under Teagle, Imperial established (or re-established) an integrated organisation, regained control over its own marketing, and began exploration for new crude sources to replace Petrolia. Thanks to Teagle's influence at 26 Broadway, Imperial was able to increase its financial resources five-fold over a five-year period.

As president of Imperial, Teagle was a vigorous advocate of local autonomy. Although many of the organisational changes took place prior to his arrival at Toronto and were introduced in order to deal with the consequences of the dissolution decree, Teagle certainly supported them as a member of Jersey Standard's board. When he took charge of Imperial, Teagle moved quickly to ensure that the eastern Canadian market was secured for his company at the expense of former associates at Standard Oil (NY).

In his dealings with other units of Jersey Standard, Teagle deployed his talents as a tough negotiator on behalf of Imperial. When he found Jersey suppliers charging Imperial prices above market levels, he threatened to buy from outside sources: 'we will purchase refined oil from such parts as can be supplied at the lowest cost to us'.[34] He also forced Jersey's technical staff to retreat from efforts to impose closer control over the administration of the Canadian refineries.

Unlike his predecessors (and some of his successors), Teagle was sensitive to the concerns of the minority shareholders and at least seemed to be aware of the degree of public antipathy toward Standard Oil. At meetings of both the board and shareholders, for example, Teagle tried to ensure that all motions were formally introduced by a Canadian member. When the Canadian government introduced its first war bond issue in 1915, Imperial quickly made a $1 million subscription, appreciating 'the beneficial result that such action could have on the Canadian public' among whom rumours of Standard Oil sales to

Germany were widespread. Sometimes the effort to downplay the Standard–Imperial connection was taken to extravagant lengths: at one point Imperial sought to deny information to Moody's on the extent of Jersey's ownership.[35]

Teagle also introduced an employees' stock ownership plan at Imperial in 1915. A few other companies had experimented with this venture at 'welfare capitalism' but Imperial was the first company in the Jersey Standard group to undertake it. In order to encourage participation, instalment purchasing was permitted and Imperial drew on its retained earnings as a reserve to cover the costs involved. When Jersey officials objected to the plan on the grounds that the parent firm's equity would be diluted, Hanna resorted to a special provision in Imperial's charter that enabled it to issue a 'stock dividend' to the shareholders.[36]

But Teagle was also concerned over the possible resale of these shares by employees. In an angry letter to an Imperial Pipeline manager, Teagle complained that 'when this offer was made to employees it was not with the thought that they would speculate in the company's stock, but rather that they would retain it as a permanent investment and thus secure for the company their increased interest and co-operation'. Although he acknowledged that 'they are entirely free to do as they please', Teagle took steps to monitor the situation and try to prevent resales. While Teagle emphasised such points as 'loyalty' versus 'speculation' he was also clearly concerned about the possible acquisition of Imperial stock by 'outsiders'.[37]

Teagle's response to this situation indicates the limits of his conception of autonomy. Teagle was a 'company man', one of the foremost examples of a new generation of professional managers: and the company to whom he offered his loyalty was Jersey Standard. His efforts to develop Imperial were based on his estimate of that company's potential role in the Jersey Standard system. The expansion of refining and marketing were necessary steps to counter the Shell invasion. The promotion of exploration in the Canadian West and acquisition of Peruvian properties reflected Teagle's conception of Imperial's function as a vehicle for expanding Jersey's foreign business and crude supplies in the wake of the 1911 decree.

The management team that Teagle assembled consisted largely of Americans from Jersey Standard. The rationale was that Imperial lacked qualified, experienced people. This was partially true, if only because of Standard's previous policies; but even experienced managers like Guthrie were passed over to make way for Teagle's appointees. The Americans – especially Mayer, head of the sales division – brought a degree of efficiency (and ruthlessness) that Canadian clients and

Imperial's older employees found unsettling. Mayer's measures were effective but they rankled in a business community accustomed to more sedate practices.

When Teagle returned to 26 Broadway, Charles Stillman, the head of the Sarnia refinery, succeeded him as president; but the real power at Imperial through the Second World War was held by G. Harrison Smith, another Teagle protégé. As treasurer of the Canadian firm before becoming president in 1933, Smith was directly involved in the financial linkages between Imperial and Jersey. According to Ewing, Smith 'regarded himself as being in a position of stewardship to Jersey Standard'.[38] Meanwhile, the remnants of the 'old' Imperial departed and were replaced by 'company men' in the Teagle mould.

Teagle's legacy to Imperial Oil was mixed: on the one hand he built an integrated operation that was not simply a paper organisation that was managed in effect as a sales agency out of New York City with a small refinery managed from Buffalo. By 1917 Imperial was a viable entity with refining capacity capable of meeting national needs, a national sales system, and an exploratory organisation that ultimately provided Imperial with a full-scale crude oil base.

At the same time Teagle's measures ensured that Imperial would function as part of the Jersey Standard system, albeit in a different way. The Cygnet line, the introduction of Jersey Standard managers and practices, the techniques through which International Petroleum was run, all welded Imperial into a larger continental and global system. The local autonomy that Teagle had asserted as president of Imperial was successful largely because of his own formidable personality and his connections with Jersey's top management. Teagle's successors at Imperial were modelled on Teagle in terms of their professional commitment, but they were not assertive in his fashion; and as president of Jersey Standard after 1917, Teagle became an advocate of stronger links with subsidiaries.

V

There is no question that in a practical physical sense Imperial emerged from the Teagle era as a better organised enterprise. The major limits (beyond the bonds of ownership which are present in all parent–subsidiary relationships) were psychological. Like Teagle himself, the men who functioned as 'top management' during and after the Teagle era perceived Imperial's role as a constituent part of a larger structure rather than as potentially self-sufficient national affiliate of a multinational enterprise. To some extent Jersey Standard imposed control from above; but the essence of the relationship was the acceptance of that control by those who managed Imperial Oil.

Both supporters and critics of foreign direct investment in Canada may find ammunition for their arguments in the story of Imperial Oil between 1898 and the 1920s. On the one hand, it is unlikely that Imperial could have survived into the twentieth century without access to capital and technology that was provided by Jersey Standard. At the same time, the company could hardly be portrayed as anything more than nominally 'Canadian' at the end of the Teagle era, and its partial restoration as an integrated entity did not reflect any new-found sensitivity on the part of Jersey Standard's executives toward Canadian concerns or interests.

What is perhaps the most significant element in this history, however, is the connection between the strategy of the parent firm and the nature of its relationship with the Canadian subsidiary. To some extent Teagle himself played a major role in the transformation of Imperial into an integrated organisation: his aggressive and decisive style of leadership and his ties to Jersey Standard's top management as Rockefeller's heir-apparent helped resurrect Imperial from its moribund state. But there were broader factors at work.

When Standard took over Imperial it faced no serious competition in North America and could organise the market on a continental basis to maximise the efficient use of its existing system. From Standard's perspective in 1899 Imperial's main assets were its sales agencies, but there seemed to be no need for a Canadian-based co-ordinating bureaucracy. The Canadian market could simply be integrated into Standard's supply and refining network.

By 1912, however, circumstances had changed considerably. The advent of Shell as a North American competitor and the Standard dissolution decree required a major revision of Jersey Standard's strategy for the North American market. From this change a new role for Imperial emerged as an instrument of Jersey Standard's international operations, and the parent firm's northern bulwark against Shell. For both of these purposes Imperial had to be resuscitated and in the process its organisational antonomy was enhanced. Imperial thus became the inadvertent beneficiary of a necessary change in direction by the parent enterprise; but there is no question that it did emerge as a stronger entity than it had been either as a vassal to Standard in 1898-1911 or as an independent but vulnerable Canadian oil company in the years before the Standard takeover.

NOTES

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1. The best summary of the debate over foreign direct investment in Canada in the 1960s and 1970s is M. Bliss, 'Founding FIRA: The Historical Background', in J.M. Spence and W.P Rosenfeld (eds.), *Foreign Investment Review in Canada* (Toronto 1984), pp. 1–11 For examples of the critical literature, see K. Levitt, *Silent Surrender· The Multinational Corporation in Canada* (Toronto 1971); G. Laxer, *Open for Business: The Roots of Foreign Ownership in Canada* (Toronto 1989). A Slightly different appraisal of the subject is offered by J. Niosi, *Canadian Capitalism* (Toronto 1981), pp. 118–47.
2. On the background to Petro-Canada and the National Energy Program, see L. Pratt, 'Petro Canada', in A. Tupper and G.B. Doern (eds.), *Public Corporations and Public Policy in Canada* (Montreal 1981), pp. 95–148; S. Clarkson, *Canada and the Reagan Challenge* (Toronto 1985), pp. 55–82; and a more acidulous account of these events by P. Foster, *The Sorcerer's Apprentices· Canada's Super-Bureaucrats and the Energy Mess* (Toronto, 1982).
3. M. Bliss, *Northern Enterprise: Five Centuries of Canadian Business* (Toronto 1987), p 516.
4. D. Crane, *Controlling Interest. The Canadian Gas and Oil Stakes* (Toronto 1982), pp. 88–90.
5. See M.Z Brooke and H.L. Remmers, *The Strategy of Multinational Enterprise* (1978); M.Z. Brooke, *Centralization and Autonomy: A Study in Organizational Behaviour* (1984).
6. See G.D Taylor, 'Management Relations in a Multinational Enterprise: The Case of Canadian Industries Ltd., 1928–1948', *Business History Review*, Vol. 55 (Autumn 1981), pp. 337–58; C. Wilson, 'Multinationals, Management and World Markets A Historical View', in H.F. Williamson (ed.), *Evolution of International Management Structures* (Newark, 1975), pp. 193-216, M. Wilkins, 'The Home Office and Its Branches. Some Reflections on Multinational Enterprises in Latin America', Paper presented to Conference on the History of Public Policy, Harvard University, 1979.
7. On the origins of the Canadian oil industry, see E. Gould, *Oil· The History of Canada's Oil and Gas Industry* (Victoria, B C, 1977), pp. 39–46, E. Grey, *The Great Canadian Oil Patch* (Toronto, 1970); M. O'Meara, *Oil Springs: The Birthplace of the Oil Industry in North America* (Oil Springs, Ontario, 1958).
8. Gould, *Oil*, pp. 189–91; R. Collins, 'The Birth of Imperial', *Imperial Oil Review*, Vol. 64 No. 1 (1980), pp. 7–11.
9. Although Imperial began issuing cash dividends again in 1891, it continued to follow a conservative policy: the average rate in 1892–98 was 6 per cent. Expansion (principally the acquisition of new refining capacity) in the 1890s was financed largely through loans from the Bank of Montreal, which required a 10 to 12 per cent interest charge and left the company chronically short of working capital. See J S. Ewing, 'The History of Imperial Oil', manuscript at Imperial Oil Archives, Toronto, Ch. 2, pp. 82– 83, 92. (Hereafter cited as Ewing, 'Imperial Oil', with chapter and page numbers).
10. Collins, 'Birth of Imperial'.
11 In addition to the smell, sulphur-laden oil caused the wicks in lamps to smoke and crust over rapidly. Standard Oil encountered similar problems when it expanded operations from the Pennsylvania fields to Ohio and Indiana in the 1880s, which explains its interest in recruiting Frasch. See R. Hidy and M. Hidy, *Pioneering in Big Business, 1882–1911* (New York, 1953), pp 155–63. According to Ewing, Frasch, like his contemporary, T. Edison, hired his services to the highest bidder in order to procure a laboratory for his experiments. See Ewing, 'Imperial Oil', Ch. 3, pp. 42–6.
12 Ewing, 'Imperial Oil', Ch. 4, p 26.
13. Hidy and Hidy, *Pioneering*, pp. 254–6, Ewing, 'Imperial Oil', Ch. 4, pp. 5 et seq

14. Ewing, 'Imperial Oil', Ch. 4, pp. 62–6.
15. Hidy and Hidy, *Pioneering*, p. 257.
16. Imperial Oil Archives, Toronto (hereafter cited as Imperial Oil Records, with accession number and box file number), Accession number 80–0013, Box 24, File 5, Statement of First Distribution Shares, Imperial Oil Co. 14 Jan. 1899.
17. Hidy and Hidy, *Pioneering*, pp. 474-75; Ewing, 'Imperial Oil', Ch. 5, pp. 47–48.
18. Quoted in Ewing, 'Imperial Oil', Ch. 4, p. 90.
19. On Imperial's administrative structure during 1899–1911, see Ewing, 'Imperial Oil', Ch. 5, pp. 22 et seq. Brainerd provided a description of company organisation in 1911: Imperial Oil Records, Acc. 80–0013, Box 24, File 1, A.H. Brainerd to M.F. Elliott, 22 Nov. 1911.
20. Curiously, Canadian nationalists have not recognised their opportunity. For example, E. Shaffer in *Canada's Oil and the American Empire* (Edmonton, 1983), pp. 34–5, comments that 'Standard not only eliminated a competitor but also obtained a fully integrated company' in Canada. R.T. Naylor in *The History of Canadian Business 1867–1914* (Toronto 1975), Vol . II, pp. 84–5, asserts that the move to reduce duties on refined oil in 1904 came from small refiners and industrialists who were 'adverse . . . to Standard's monopoly', although in fact Imperial was a leading advocate of tariff revision.
21. Imperial Oil Records, Acc. 80–0013, Box 24, File 1, Brainerd to Elliott, 22 Nov. 1911; Brainerd to H.C. Folger, New York, 27 Nov. 1911; W.J. Hanna to Brainerd, 4 Dec. 1911.
22. B.H. Wall and G.S. Gibb, *Teagle of Jersey Standard* (New Orleans, 1974), pp. 82–3
23. Wall and Gibb, Teagle, pp. 60 et seq.
24. Wall and Gibb, *Teagle* pp. 83–4, 94–6; G.S. Gibb and E.H. Knowlton, *The Resurgent Years 1911–27* (New York, 1956), pp. 28–9, 76–7.
25. Imperial Oil Records, Acc. 80–0013, Box 24, File 1, Walter Teagle to H.P. Chamberlain, 27 Jan. 1912; Ewing, 'Imperial Oil', Ch. 7, pp. 81–2.
26. Ewing, 'Imperial Oil', Ch. 7, pp. 23–26; Ch. 8, pp. 46–53; Imperial Oil Records, Acc. 80–0028, Box 1, File 3, Teagle to W.J. Hanna, 28 Nov. 1913; Hanna to Teagle, 16 Dec. 1913; Teagle to Hanna, 10 Jan. 1914.
27. Ewing, 'Imperial Oil', Ch. 7, pp. 30–4; Ch. 9, pp. 3–9; Ch. 11, pp. 96–8.
28 Imperial Oil Records, Acc 80–0028, Box 2, File 1, Imperial Oil Stations, 1 Jan. 1918.
29. Imperial Oil Records, Acc. 80–0013, Box 24, File 7, W T. McKee, Treasurer, Imperial Oil to W.A. Barstow, Standard Oil (NJ), 9 Aug. 1914; Imperial Oil Records, Acc. 80–0028, Box 2, File 1, Teagle to Bedford, 12 Aug. 1915; McKee to Teagle, 2 Feb. 1917.
30. On Imperial's western Canadian explorations, see Gibb and Knowlton, *Resurgent Years*, pp. 43–4, 89–91; Ewing, 'Imperial Oil', Ch. 7, pp. 9–17; D.H. Breen, 'The CPR and Western Petroleum, 1904–1924', in H. Dempsey (ed.), *The CPR West* (Vancouver, 1984), pp. 237–44. Breen maintains that Imperial (and Jersey Standard) was more interested in acquiring concessions to block the entry of competitors than in developing the western oil fields, but his own account indicates that Imperial was drilling in the Turner Valley by 1922–23 and made a minor strike in 1924.
31. Imperial Oil Records, Acc. 80–0028, Box 1, File 2, W.J. Hanna to Teagle, 12 June 1913; Teagle to Hanna, 14 June 1913, Teagle to Hanna, 8. Nov 1913; Hanna to Teagle, 14 Nov 1913. See also Gibb and Knowlton, *Resurgent Years*, pp. 94–7
32. J.C. Brown, 'Jersey Standard and the Politics of Latin American Oil Production, 1911–1930' in J.D. Wirth (ed.), *Latin American Oil Companies and the Politics of Energy* (Lincoln, NB, 1985), pp. 15–20, 28–9.
33. Ewing, 'Imperial Oil', Ch. 8, p. 15.
34 Imperial Oil Records, Acc. 80–0013, Box 24, File 2, Teagle to F.D. Asche, Standard Oil (NJ), 17 March 1916.
35 Imperial Oil Records, Acc. 80–0028, Box 1, 'Special File', Teagle to Bedford, 16 Nov. 1915.

36. Ewing, 'Imperial Oil', Ch. 8, pp. 48–53; Imperial Oil Records, Acc. 80–0028, Box 2, 'Special File', Bedford to Teagle, Memorandum on Employee Stock Distribution, Feb.1916; Bedford to Teagle, 25 Sept. 1916.
37. Imperial Oil Records, Acc. 80–0028, Box 2, 'Special File', Teagle to W.J. Davidson, 17 June 1916.
38. Ewing, 'Imperial Oil', Ch.15, p. 5.

'Hands Across the Water': Canadian Industrial Financiers in the City of London, 1905–20

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This is a small part of the story of the enormous exodus of capital from investors in the Old World to industrial enterprises in the New World before the First World War. Gaining momentum from the turn of the century, British portfolio investment in Canadian industry reached a crescendo during the Canadian merger wave of 1909–13 only to plummet during the recession at the end of that period. With the outbreak of the Great War one year later, the relationship between British investors and Canadian business was permanently severed and Canadian industry began to rely on capital raised in North America, and would do so for the remainder of the twentieth century.

Canadian industrial financiers first began raising money through the London capital market by enlisting the services of 'City' firms.[1] However, between 1909 and 1912 a select few of these Canadian financiers (identified in Table 1) set up their own firms in London and, eventually, some began to act as principals in subsequent London flotations of Canadian industrial securities. This essay will briefly examine the careers of these financiers. Since the circumstances that led to the establishment of these London branches, and the manner in which these Canadian financiers were able to penetrate the City, are not revealed in these surveys, a more detailed case study addressing these issues is presented. This case study is provided by the activities of Max Aitken (later Lord Beaverbrook), who entered English business, politics, and society primarily to make a market for Canadian securities in London.

By 1909, as Aitken was gaining a foothold in Britain, other Canadian 'adventurers' were competing for position in the City of London. In the process, some of these financiers gained the skills that allowed them to establish the dominant Canadian investment houses of the twentieth century. Edward R. Wood's Dominion Securities Corporation, now known as RBC Dominion Securities Inc., remains a pillar of the Canadian investment banking community. Wood, Gundy & Co., formed by two ex-employees of Dominion Securities, is, at present,

TABLE 1

CANADIAN FINANCIERS WITH INVESTMENT BANK BRANCHES IN LONDON

		Year Established	
Financiers	Investment Banks	Canada	London
E.R. Wood	Dominion Securities Corporation	1901	1908
W.M. Aitken	Royal Securities Corporation	1903	1910
R. Forget	Canada Securities Corporation	1910	1910
C. Meredith	C. Meredith & Co., Ltd.	–	1910
A.J. Nesbitt	Investment Trust Co.	1909	1911
G.P. Grant	Dominion Bond Co.	1910	1911
J.G. Greenshields	Greenshields & Co.	1910	1911
H O'Hara	H. O'Hara & Co.	–	1912*
G.H. Wood	Wood, Gundy & Co.	1905	1912*
R.S. Meredith	British Canadian Finance Corp.	–	1912*
J.A. Mackay	Mackay & Co. Ltd.	–	1912*
–	Canadian Industrial Bond Co .	–	1912*

Source The above information was collected from correspondence in the Beaverbrook Papers as well as various issues of two contemporary Canadian financial weeklies: the *Monetary Times* and the *Journal of Commerce*. The years marked by an asterisk (*) were estimates based on data collected by Henry W. Sites from 1910 to 1913 and published in his *Investment Bankers and Brokers in the United States and Canada* (New York, 1914), pp. 168–79, 441–50.

Canada's largest securities underwriter.[2] Nesbitt, Thompson & Co.was founded in 1912 by Arthur J. Nesbitt, previously one of Max Aitken's most talented employees. Nesbitt's own firm became one of Canada's most active investment houses during the 1925–30 merger wave, and Nesbitt Thompson Deacon Inc., as it is presently known, remains in the top rank of contemporary Canadian investment houses. Aitken's own Royal Securities Corporation emerged as one of the largest and the most aggressive investment houses in the country until it was acquired by the Canadian branch of Merrill Lynch in 1969.[3]

I

The early growth of these investment houses was intimately connected to the rapid expansion of Canadian manufacturing enterprises. From the turn of the century until 1913, Canadian industry grew at a rate never before, or since, experienced in the country. Known as the Laurier boom (because it coincided with Prime Minister Wilfrid Laurier's tenure in office), this phase of growth exhibited four main features: a very high rate of gross fixed capital formation; a pronounced increase in manufacturing industry's share of output; a significant rate of net savings; and, simultaneously, an enormous net capital inflow, mainly in the form of portfolio investment from Britain. The Laurier boom thus witnessed the emergence of the Canadian industrial financier who sought capital at home and abroad for rapidly expanding manufacturing enterprises.[4]

High profile financier-socialites like Aitken, however, were preceded in London by Canadians such as E. Mackay Edgar and James Dunn. Edgar, a Montreal broker whose investment house was already working in the London capital market through agents, moved to London in 1905 to join the City firm of Sperling & Co. By 1907, he had become a member of the London Stock Exchange. James Dunn, also a Montreal broker, used Charles Fischer as his London agent before joining him to form Dunn, Fischer & Co. in 1906. Edgar and Dunn were involved in the financing of Canadian manufacturing companies such as the Canadian General Electric Co. and the Lake Superior Corporation, later known as Algoma Steel.[5]

When these financiers arrived in the City, they found that the larger Canadian commercial banks, such as the Bank of Montreal, the Canadian Bank of Commerce, and the Royal Bank of Canada, had already set up branch offices in London. These banks were facilitating the London flotations of securities issued by the federal and provincial governments of the Dominion as well as by Canadian railway companies such as the Canadian Pacific Railway, a favourite of British investors since its formation in 1880.[6] Nevertheless, the commercial banks had no interest in selling the more speculative industrial securities. The banks relied on traditional methods of commission financing in which they were paid a flat per cent commission by the issuing entity – governments or railway companies – irrespective of the flotation's ultimate failure or success. The new methods of utility and industrial financing, which involved purchasing entire new issues and taking ordinary shares (rather than a set commission) as payment, were eschewed as too risky by the commercial banks.

In fact, the industrial financiers using these new high-risk methods were a very different breed from the cautious managers of Canada's large commercial banks. They were closer in nature to stockbrokers. Many began their careers as such and continued to retail securities long after they became more heavily involved in the 'new issue' side of the business. The institutions they set up were, at least initially, very personal vehicles. They were called securities corporations, bond houses, trust companies, stockbroking firms, or investment banks, but generally they were the vehicle of one dominating personality – a corporate promoter in the most general sense of the phrase.

Beginning as local stockbrokers and bond salesmen in various regions of Canada, these industrial financiers soon established links with the City of London as significant portions of the larger Canadian industrial issues began to be sold to European investors through the London market. As illustrated in the appendix, from 1909, the first year of the Canadian merger boom, until 1913, when a sharp financial crisis brought it to an end, over 60 security issues of Canadian manufacturing companies were floated on the London market.

Such industrial financiers were largely unnecessary before the turn of the century in Canada because manufacturing companies depended almost entirely upon retained earnings and the occasional bank advance for finance. From time to time, these local industries would incorporate and then sell some of their securities to community members. These securities were rarely resold, however, and the companies involved were too small and too little known beyond their locales to have their securities listed on a public stock exchange. Community members usually invested because of their personal knowledge of the particular enterprise; thus, no financier was necessary to promote the sale of such securities.[7]

At the turn of the century large manufacturing companies began to appear in Canada, often through the merger of a number of smaller regional operations. Ownership thus became more diffuse as thousands of investors purchased the bonds, shares, and debentures of the new 'national' enterprises. Brokers and bonds salesmen, trained in the methods of utility financing, emerged to take on the task of preparing the groundwork for the flotation of these large issues.[8] These tasks included appraising the value of the companies, preparing the prospectuses, and arranging 'bridge' financing to keep the company liquid until all the proceeds from the security subscription were collected. Unlike the commercial bankers, who provided call loans and other short-term forms of finance, these financiers often took a direct role in the companies they financed, sometimes remaining on the board of directors for years after their initial services had been rendered. As for mergers, these financiers were central to the creation, promotion and, in the first few years, even the management of such enterprises.[9]

The merger wave of 1909–13 marked the peak of Canadian industrial financing in London. Almost one-half of the Canadian industrial issues floated on the London market during these years were made up of shares, debentures, and bonds of recently merged companies.[10] More significantly, these mergers consistently produced the largest security issues. In individual cases, Canadian flotations would occur simultaneously with the London issue – but the larger the merger, the greater the proportion of the securities floated in London. This was a direct consequence of the depth of the London market relative to the shallowness of the Canadian market.[11] Throughout this period, it remained the rule that a British investment bank or a consortium of City investment banks and brokers would conduct the flotations of the majority of Canadian industrial issues, while Canadian financiers would only handle a small minority of such issues.[12] Nonetheless, the subsequent importance of these few Canadian investment houses warrants further investigation of their activities.

II

Edward Wood was Canada's first major industrial financier; his firm, the Dominion Securities Corporation, being the first of its kind in Canada. Dominion Securities was established in 1901 by a group of wealthy Toronto merchants and financiers, the most prominent of whom was George Cox, a man who seemed to have an interest in everything worth owning in late Victorian Ontario. At the turn of the century, Wood was the manager of the Central Canada Loan & Savings Co., one of many financial intermediaries controlled by the Cox group. Business there was so brisk that Dominion Securities was incorporated just to manage Central Canada's bond and share business. Edward Wood became the manager of the new operation and put together a solid staff that soon used their experience to form a new investment house. In 1905, G.H.Wood (no relation to Edward Wood) and J.H. Gundy, Dominion Securities' secretary and accountant, left Dominion Securities to form Wood, Gundy & Co., which would soon establish a London branch and eventually become a premier investment bank in its own right.[13]

Initially, Dominion Securities was involved with the underwriting and retailing of provincial, municipal, and utility securities. However, Edward Wood soon shifted Dominion Securities into industrial finance by underwriting the securities of manufacturing firms. He began in 1902 with the financing of the Dominion Iron & Steel and the Dominion Coal companies of Nova Scotia. Eight years later, he would head up the syndicate that financed the merger of these two companies into the Dominion Steel Corporation.[14] Wood's approach to industrial finance was cautious, however. He did not allow Dominion Securities to overextend itself in the underwriting business, and he always ensured that his syndicate partners were stable and had deep pockets. Unlike many of his fellow industrial financiers, Wood refused to promote mergers directly. He would facilitate the reorganising and financing of prominent industrial mergers, but he would not actively work to bring such companies together just to create an attractive security issue. Although Dominion Securities' profits may have been less spectacular relative to more active investment banks, Wood's strategy paid off in the long run. By the end of the decade, Dominion Securities was the largest investment house in the country and Wood was 'undoubtedly the most influential high-grade bond man in Canada'.[15]

The Dominion Securities Corporation established its branch office in London in 1908, making it the first Canadian investment bank with a formal link to the British capital market. Presumably, the new London office became necessary because of Wood's inability to establish an agency arrangement with any significant London investment bank. Perhaps uncomfortable with the risk inherent in such a competitive environment, Wood and E.R. Peacock, the manager of Dominion Securities' London office, began negotiating the sale of their English business to an established City merchant bank, Speyer Brothers, almost immediately after the London office was opened.[16] Wood and Peacock worked with Speyers during the Dominion Iron & Steel flotation of 1909 – Dominion Securities had handled the Canadian issue while Speyers had taken care of the much larger London flotation.[17] Speyers did not ultimately acquire Dominion Securities' branch operation, however, and Wood continued to restrict his firm's role to that of facilitator in London. From 1909 until 1914, Wood ensured that the London flotations of his industrial client's securities in Britain were conducted by syndicates of established City firms.[18]

Other Canadian financiers took a much more aggressive stance in Britain. The most ambitious and successful of this group was Max Aitken. His Royal Securities Corporation was responsible for some of the most significant industrial flotations in London. Created in 1903 by an active group of Halifax financiers and lawyers, headed by John F. Stairs, Royal Securities was intended to raise money for the group's industrial investments in Nova Scotia and its utility investments in the West Indies. Stairs appointed his 24-year-old assistant, Max Aitken, as general manager of the new investment house. From 1903 until 1907, Aitken put most of the firm's energy into foreign utility mergers and security promotions because of their profitability relative to industrial financing. Then, as rapidly as he had been able to amalgamate dilapidated urban railway and lighting operations in the Caribbean, Aitken began to concentrate on merging Canadian manufacturing companies and promoting their new share issues. By 1909, he established his reputation as the pre-eminent merger promoter in Canada, and within two years was the foremost Canadian financier in the City of London.[19]

Arthur Nesbitt was Aitken's most senior employee during Royal

Securities' utility phase. He was also a share speculator in his own right, however, and when the market fell in 1907, Nesbitt 'borrowed' heavily from Royal Securities to cover his losses. Upon discussing his employee's indiscretions, Aitken generously gave Nesbitt an opportunity to repay what he owed over a lengthy period of time. However, when further money went missing, their relationship predictably deteriorated. Nesbitt wisely moved to strike out on his own and persuaded a small group of wealthy bankers and industrialists to put up a modest capital of $100,000 (£20,548) to launch the Investment Trust Co. in 1909. Despite its name, Investment Trust was in fact an investment bank along the lines of the Royal Securities Corporation.[20]

Nesbitt entered the field of industrial financing and merger making aggressively, and, within two years, his company's capital had increased tenfold. In 1911, he set up a London branch of Investment Trust in order to keep a pulse on the European market for his growing stable of Canadian industrial securities. The securities of at least one of Nesbitt's prominent mergers, Canadian Steel Foundries, were floated on the London market in March of 1911. Although Western Canada Trust and the London office of Royal Securities were primarily responsible for this issue, Nesbitt was no doubt preparing Investment Trust to become a London issue house in its own right.[21] Before the expansion was completed, however, Nesbitt resigned from Investment Trust and set up his own securities house, Nesbitt, Thompson & Co., with his personal capital. Although not active as a London investment bank before the Great War, Nesbitt, Thompson & Co. would later become a major industrial investment bank.[22]

Garnet P. Grant, another notable Canadian financier, started his business career as a manager in a Quebec power company. When the power company changed owners, Grant decided that his future lay in high finance instead. Going straight to the top, he asked Aitken for a job in 1908. Unsuccessful but undeterred, Grant then struck out on his own, holding himself out as a merger promoter.[23] In his first industrial consolidation, the Carriage Factories merger of 1909, Grant merely handled the merger negotiations; the flotation itself was conducted by the Montreal stockbroking firm of Mackay & Co. (which subsequently established a London branch of its own). Immediately afterwards, Grant set up the Dominion Bond Co. to handle the financial end of his merger promotions. At first, Grant was too inexperienced, and his industrial consolidations too small to have their securities placed on the London market.[24] But by 1911, Grant was promoting a number of relatively large pulp and paper companies and had built a string of offices in Canada from Montreal to Vancouver. That same year, he established a branch office in London and sent Dominion Bond's vice-president to run the new operation.[25]

Grant's first London flotation was a £267,000 issue of Spanish River Pulp & Paper Co. bonds. Although the issue was handled by City investment houses, Dominion Bond participated in the underwriting and was active in promoting the bond flotation. The flotation proved so successful that the issue was oversubscribed, and the subscription list was closed ahead of schedule.[26] As indicated in the appendix, this was followed by the issue of £317,000 worth of Spanish River preference shares in June 1912 and an issue of £300,000 short-term (two to three year) 6 per cent notes in November 1913.

Judging by the number and size of Grant's industrial issues in Canada and later in England, he clearly had ambitious goals for Dominion Bond. It is even possible that, given the rate of growth of Grant's investment house, Dominion Bond soon would have replaced Aitken's Royal Securities as the foremost industrial investment bank in both Canada and London. Foolishly perhaps, Grant began to concentrate too heavily in one area of industrial finance – pulp and paper companies. While undoubtedly one of Canada's fastest growing manufacturing sectors between 1910 to 1912, pulp and paper also suffered a sharper downturn than any other industry during the 1913 recession. By August of 1913, pulp and paper shares had begun to plummet. The death knell was sounded in October of 1913 when it became evident, as one financial paper put it, that the 'losses on the market [thus far] were largely confined to the group controlled by the Dominion Bond Company'.[27] By April of 1914, Dominion Bond was in court under a compulsory winding-up order.[28]

Grant, Aitken and Nesbitt – the three most aggressive promoters during the merger boom – all faced stiff competition for new issue business from the Montreal firm of C. Meredith & Co. After Dominion Securities, this was the first Canadian firm to consider establishing a London office, in part because of its relationship with the Bank of Montreal. With excellent connections in London through its new issue business on behalf of the Canadian Pacific Railway, the Bank of Montreal was Canada's largest and most powerful commercial bank and many of the Bank's directors were also directors and shareholders in C. Meredith & Co. The firm began to engage in industrial merger promotion after 1908 when Gerald Farrell left the employ of Royal Securities to become secretary-treasurer of C. Meredith & Co.[29] The firm's London office was established by 1910 and was acting as an issue house in England by at least 1913, when it floated £295,000 worth of Dominion Glass's preference shares.[30]

Little is known about the Canada Securities Corporation, yet another issue house, but there are traces of the career of its founder Rodolphe Forget. Called the 'king of brokers' by the Canadian financial press, Forget himself was born into a family of French-Canadian financiers. He was the nephew of Louis Joseph Forget who, in 1873, had founded one of Canada's first brokerage firms in Montreal. Mainly involved in railway, shipping, and utility companies, the principal activities of the era, Louis Forget was elected president of the Montreal Stock Exchange in 1895. Following in the footsteps of his uncle, Rodolphe Forget started his own very successful brokerage firm around the turn of the century and eventually became vice-president of the Montreal Stock Exchange.[31]

Forget had established himself as the leading utilities merger promoter in Quebec by 1909, the year he began to underwrite and promote industrial merger flotations such as the £1,460,000 Amalgamated Asbestos bond issue, of which £420,000 worth of securities were floated in London and the rest sold in the United States and Canada.[32] Headquartered in Montreal, the Canada Securities Corporation was only one of many financial intermediaries with which Forget was intimately connected. Unlike Wood, Aitken, Grant, or Meredith, however, Forget's links were closer to Paris and Brussels than to London. By 1910, in fact, Forget had a fully functioning Paris branch office, as well as agents in Brussels.[33] As a consequence, very few of the industrial issues with which he was involved were floated in London. Instead, the issues of enterprises such as the Wayagamack, East Canada, and Belgo companies – all of which produced pulp and paper – were floated in Paris and Brussels and, until the Great War, were largely owned and controlled by French and Belgian shareholders.[34] Nevertheless, shares in some of Forget's manufacturing companies were listed on the London Stock Exchange to facilitate trading as much as possible, and the Canada Securities Corporation must have been set up in London with this in mind.[35]

Greenshields & Co. was formed in 1910 by J. Gordon Greenshields, a financier who had a close working relationship with Rodolphe Forget. Originally trained as an engineer, Greenshields came from a wealthy Montreal family. His father, James Naismith Greenshields, was one of Montreal's top corporate lawyers and a substantial financier-promoter in his own right; he was, in fact, founder of Wayagamack Pulp and Paper and president of Shawinigan Water & Power.[36] J. Gordon Greenshields, however, made his mark more as an underwriter of industrial shares and bonds and less as a merger promoter. Through Forget, Greenshields was also connected to the Paris and Brussels capital market. Two or three years after he set up his Canadian investment house, Greenshields established a London branch office. Greenshields & Co. was damaged by the severe downturn in industrial share values in 1913, but, unlike Grant's Dominion Bond Co., Greenshields managed to survive the crisis.[37]

The rivalry among the Montreal investment banks was intense. They were determined to establish a new issue business in London on the back of the industrial mergers they were negotiating and promoting in Canada. In the process, they had few scruples about hiring away each other's key personnel. As Max Aitken complained to his English associates, one of his main difficulties lay 'in the constant inroads upon our staff of young men, which are being made by other concerns'.[38] Investment houses not actively engaged in the merger business were somewhat outside this rivalry, and a few of these firms, such as Dominion Securities, were highly sought after as syndicate partners in the underwriting of merger propositions put together by the aggressive Montreal houses. Aitken established very close ties to Wood's Dominion Securities, and, in his own words, he was 'relieved from the nightmare of jealousy so far as that group is concerned' because of their differing objectives and Dominion Securities' limited influence in Montreal.[39]

Very little is known about the remaining financiers and investment houses listed in Table 1, and even less about the type and extent of the operations of their London offices.[40] Nevertheless, all must have had sufficient underwriting business in London to justify the expense of a branch office. Because these firms were heavily involved in industrial financing in Canada, especially new mergers, it is only reasonable to assume that the sale of industrial securities constituted a significant portion of their business in London. Many, but not all, of the branches acted as fully functioning investment banks. Evidence from the records of the London Stock Exchange suggests that two firms – H. O'Hara & Co. and Wood, Gundy & Co. – did not develop the necessary expertise or connections to act as issue houses in London before the Great War.[41]

The British, and for that matter the European, business of these Canadian financiers declined precipitously in 1913–14 as a consequence of two successive shocks. The first was the already mentioned worldwide recession of 1913; British investors could not buy Canadian industrial securities in the same volume as they had previously. Accordingly, Canadian investment houses found that their issues became increasingly 'stuck' – not flowing smoothly from the investment banks through jobbers and brokers to investors – as the year wore on, and underwriters were forced to pick up the unsold portions for the first time. In May of

1913, approximately 35 per cent of Garnet Grant's Dominion Canners issue of £154,320 bond issue was left with underwriters, and so was most of C. Meredith & Co.'s Dominion Glass issue of June. In the following months, large portions of the issues of the J.H. Sherrard Manufacturing Co., Dominion Steel Corporation, and the Algoma Steel Corporation also had to be picked up by underwriters.[42] This produced a shift of Canadian issues out of the London market to Canada and the United States, as Edward Wood pointed out a short time later: 'Owing to the disappointing reception of so many of our securities at the various public offerings in London, the underwriters in many instances placed in Canada and the United States parts of the unsubscribed portions of London issues'.[43]

The second shock was the advent of the Great War itself. The London Stock Exchange was closed and only reopened in January 1915 under very stringent limitations. Severe restrictions were placed on new capital issues such that only flotations that were 'in the best interests of British war finance' were permitted.[44] By February of 1915, after a number of proposed Canadian issues had been refused, a great controversy erupted in Canada over the control of new capital issues by the British Treasury. Despite protestations, the Treasury's 'Committee on Fresh Issues of Capital' continued to refuse Canadian applications throughout the war, with one understandable exception: the Canadian Vickers issue of £1,000,000 worth of debentures for its wartime shipbuilding plant in Montreal.[45]

Increasingly, Canadian financiers began raising industrial capital in New York, Boston, Philadelphia, and Canada itself. In the first four months of 1915, 55 per cent of Canadian bonds were issued in the United States.[46] Canadian financiers began to form temporary working arrangements and even partnerships with American investment houses, some of which became permanent arrangements after the war. Royal Securities headed up a syndicate which included New York's William A. Read & Co., and Boston's E.H. Rollins & Sons and Parkinson & Burr, to issue $4,000,000 worth of Riordan Pulp & Paper Co. bonds. C. Meredith & Co. entered into a joint venture with the Guaranty Trust Co. of New York to form the United Bond & Securities Co., a North American investment bank capitalised at $1,000,000. The Montreal and Ottawa offices of Greenshields & Co. were connected by direct wire with the New York offices of Logan and Bryan, members of the New York Stock Exchange and the Chicago Board of Trade.[47] As the *Monetary Times* commented in January of 1919:

> There have been no Canadian flotations [in London] of magnitude

> in the past few years. Formerly a borrower, Canada has become a lender to the United Kingdom through the financing of food and other necessities. Furthermore, Canadian investment demand has absorbed large amounts of Canadian securities formerly placed in London. . . . The regulations requiring that all proposed issues must be approved by the Treasury are still in force. This restriction will remain for some time because of the United Kingdom's heavy commitments abroad. This will postpone further flotations in this market but will strengthen the position of Canadian securities here.[48]

III

In less than five years, a small but ambitious group of financiers had transcended their humble beginnings as brokers and bond salesmen in Canada to become effective investment bankers in London. They established branch offices in the City and began to provide finance for Canadian manufacturing companies at even greater profit to themselves. But after only two to four years, they found that the City well had run dry. Consequently, they began to transfer their energies back to Canada and, for the first time in a significant way, to the United States as well. This rapid evolution, however, is merely glimpsed through the summary above; a study of one financier, Max Aitken, will provide a more revealing analysis of the process. Fortunately, the Canadian business papers of Lord Beaverbrook at the House of Lords Record Office allow for a detailed reconstruction of his activities.[49]

Aitken's connection with the London market began in 1906, the year he incorporated the Porto Rico Railways Co. – a holding company with hydroelectric and urban railway operations in Puerto Rico that was, until then, his largest utility promotion. At this time, Aitken was facing stiff competition in the Montreal and Toronto capital markets from rival utility promoters with larger operations in Mexico and Brazil. As the Canadian capital market became increasingly squeezed, Aitken realized he had to secure money from outside the country. To do so, he brought into his underwriting syndicate a New York firm which could sell a portion of the Porto Rico issue in the United States. Still, Aitken knew that greater opportunities lay in Britain, where the Dominion government, the provincial governments, and the railways had consistently been able to borrow very large sums of money. Consequently, he sent an agent, James Harding, to London to set up a branch office. Aitken instructed Harding to spend as little money as possible until he was sure that he could sell Canadian industrial securities in Britain.[50]

Harding made contact with some of the largest brokerage firms in London and Glasgow, including Foster & Braithwaite, Fielding, Son & McLeod, and Fergusson, Guthrie & Co. The British houses, however, were unwilling to take a chance on Aitken's relatively small and unknown companies, and politely but firmly declined the business. Aitken's first London office was thus a failure and, after being in operation only three months, closed its doors in December of 1906. A firm of London stockbrokers, H. Vigne and Sons, was selected to act as the Royal Securities' temporary correspondent. James Harding, who had been handicapped by his inexperience in City financial practices, concluded that there was 'nothing to prevent this work being taken up again in the future, but it would have to be on somewhat different lines'. In particular, he advised Aitken to reserve whole issues for the British market because of the reluctance of British brokers and investment bankers to deal with small lots.[51]

A subsequent financial crisis in 1907 once again emphasised to Aitken the urgency of finding a new market for Canadian securities. As North American financial markets were hit harder than the London capital market, Aitken decided to give the City yet another try. This time, he sent his most promising employee, Arthur Nesbitt, then in charge of his Montreal office, to London. Nesbitt would spend the next 10 months, from May 1907 until February 1908, trying to place a portion of the Porto Rico issue with a major City investment house. Simultaneously, he would try to unload miscellaneous industrial and utility securities that had been issued by Royal Securities but were no longer selling in Canada. Displaying tremendous energy, Nesbitt successfully obtained interviews with some of the largest investment banking firms of Britain, including Chaplin, Milne & Co., C.J. Hambro & Son, and Arburthnot Latham, as well as the smaller London houses of Robert Fleming & Co., Dunn, Fischer & Co., and Sperling & Co., which specialised in Canadian issues. Following the trail of another young salesman who had recently sold $600,000 worth of utility bonds to various Swiss banks for Dunn, Fischer & Co., Nesbitt travelled to Geneva and Zurich.[52] He then tried his luck in Belgium and Germany, where he attempted to sell his Porto Rico bonds to the Banque Centrale Anversoise, J. Brunner (a private Belgian banker) and the Deutsche Bank. Nesbitt failed in all these attempts but, upon his return to London, received a few promising inquiries. By the end of 1907, he was selling substantial blocks of Royal Securities' bonds and shares. The timing could not have been better: the North American capital market had shut down completely in October of 1907, as the financial crisis deepened.[53]

Aitken now realised the advantage, if not the necessity, of making a market in Britain for all future promotions. Henceforth, he would follow Nesbitt's advice concerning the arranging of dividend payments through a London-based bank, the issuing of regular reports on Royal Securities' companies to European investors, and the listing of future promotions on the London Stock Exchange. By 1908, Aitken also felt that he had exhausted the possibilities for profitable utility ventures in the Caribbean and Latin America. After carefully investigating tramway and electric lighting propositions in Colombia, Ecuador, Panama and Venezuela, Aitken rejected all as falling beneath his standard of profitability, exchange rate stability, and capital safety.[54] American propositions came forward at this time, but they were far too marginal to be profitable. In addition, Canadian and American utility investments were beginning to be threatened by public ownership.[55]

At the same time, Aitken realised that 'industrials' were becoming as acceptable to British investors as utility promotions, particularly in situations where companies had, or were perceived to have, monopoly power. While industrial firms were generally much more sensitive to the business cycle than utility companies, industrial monopolies were thought to be as safe as utility companies and certainly appeared to have more stable earning patterns than the manufacturing firms facing competition. After the turn of the century, British investors became increasingly attracted to the securities of industrial 'monopolies' such as the United States Steel Corporation in large part because they were perceived to be monopolies capable of averting the downswing of the industrial business cycle. Aitken thus began to look around at Canadian industries which appeared to have a future of rapid growth as well as a corporate configuration amenable to reorganisation and the appearance of monopoly power. With a small economy and highly protective tariffs, Canada provided no shortage of such opportunities. Aitken examined iron and steel, rolling stock, portland cement manufacturing, and flour milling; all industries centrally involved in the immense investment in transportation, urban infrastructure, and wheat production then taking place in Canada.[56]

Aitken's first direct experience with an industrial flotation in London was, however, in the more limited capacity of an underwriter rather than as a merger promoter-financier. The Drummonds, a prominent family of Montreal industrialists and merchants, decided to merge together their various iron mining, manufacturing, and retailing operations into the Canada Iron Corporation in 1907. In order to raise money for the new company, they decided to make a major share offer in London. The Drummonds contracted with Ion Hamilton Benn and his newly formed Western Canada Trust Co. to conduct Canada Iron's

London flotation. They invited Aitken to take a portion of the English underwriting and guide their British financiers in a smaller Canadian flotation of shares. Aitken had previously discussed his desire to begin exploiting the British capital market on a regular basis, and George Drummond wrote Aitken that he felt 'that the time and opportunity' had arrived for Aitken 'to get into the English business in accordance with the lines you have discussed with us on various occasions'. Drummond emphasised the long-term implications of the deal:

> Now the gentlemen interested in the Western Canada Trust Company are among the strongest men in London. They are becoming deeply interested in matters Canadian, and it seems to me that if we can . . . work with these gentlemen in the present bond issue of the Canada Iron Corporation, Limited, that we will be tieing up to people that can be made of the utmost service to the various Canadian organizations, in which you and I are interested, in the future . . .
>
> My brother will probably have told you that four members of the Board of Western Canada Trust have already gone over all our properties, and are most enthusiastic in respect to same. I refer to Sir James Heath, Bart., I. Hamilton Benn, Vere Smith and Guy Ridpath.[57]

Drummond went on to explain that Western Canada Trust was backed up by some of the City's strongest brokers – George Kitchin & Co., Govett, Sons & Co., and Fielding, Son & MacLeod. Aitken soon met Benn, who was visiting Canada in connection with other business interests, to discuss the details of the British and Canadian issues. Aitken was so disappointed with Benn and his rather amateurish prospectus for Canada Iron, however, that he refused to launch a Canadian flotation and only reluctantly did he agree to underwrite a portion of the London flotation.

Aitken thus decided to make his first voyage to London in October of 1908 to see for himself the outcome of the Canada Iron Company flotation, as well as sell some securities to English and continental European investment bankers and brokers. Before he left, Aitken hurriedly contacted some well-placed business associates and obtained letters of introduction to titled City financiers and Members of Parliament, French investment bankers, and German industrialists. Aitken's requests for letters of introduction were brief and direct as the following extract illustrates:[58]

> I am sailing for England . . . Would you mind giving me a letter of

> introduction to Sir Jeremiah Coleman, as I wish to see this party, and a letter of introduction from a friend always gives one a certain prestige.[59]

The English list of introductions included Bonar Law, the ex-Glasgow iron merchant and financier who had become a Unionist Member of Parliament and retained strong links to the City through individuals such as Ion Hamilton Benn.

In fact, Aitken was pleasantly surprised to find upon his arrival in London that Benn had masterfully handled the initial Canada Iron Co. flotation:

> I was in London immediately after the [Canada Iron] public issue and I never found a finer class of men gathered together than in Mr. Benn's Western Canada Trust. I am well satisfied with our participation and I only regret that I did not understand Mr. Benn and his methods when we were in Montreal, as I do at the present time. Had I understood, I would not have been so unwilling to undertake the placing of the underwriting. But I felt he was not experienced and that the issue would not be well handled. On the contrary, the great good judgment that he displays, his indomitable energy and untarnished reputation far more than make up for his lack of experience. . . . I only regret that I dissuaded Mr. Benn from making an issue in Canada. If I had the business to do over again, our Company would be entirely at his disposal, and our efforts on behalf of his issue would be the very best we could put forth.[60]

It was the beginning of a fruitful, but difficult, relationship. While in London, Aitken sold an enormous quantity of securities that were impossible to sell in Canada due to the shockwaves of the financial panic of 1907.[61] This impressed a number of people, Benn and Law among them. Benn invited Aitken to his office in the City as well as his private residence a number of times to discuss the formation of a new transatlantic issue house that would include Bonar Law and W.M. MacLeod, a partner in the City stockbroking firm of Fielding, Son & MacLeod. As Benn put it:

> I have had some discussions with Mr. Bonar Law lately. He . . . would like to be in with you and me, but he thinks the General Election is so imminent that it would be impossible for him to join the Board. You know he is sure to get one of the most important posts in the next Ministry, and Ministers in England are not allowed to hold any directorships. He wishes, however, to take a

> substantial interest in the Company, and both he and I would like to have a share with you . . . on the lines that you discussed with me in December – that is to say, we would like to be in your inner circle.[62]

Benn wanted Aitken to expand his investment house and take over Western Canada Trust, and he even joined Aitken's board in anticipation of the merger.[63] Aitken had other plans, however. He wanted to concentrate on industrial mergers in Canada, employing agents such as Western Canada Trust solely for the first few London flotations. Through these agents, he would acquaint himself with the City's practices before moving Royal Securities to London and taking care of the British issue business himself. With this in mind, Royal Securities did not form a permanent alliance with any one firm, thus ensuring Aitken's total control over the future of Royal Securities. Moreover, Aitken's new-found respect for Benn quickly faded as the Canada Iron issue 'became stuck' after the initial successful flotation, and the Canadian underwriters were asked to pick up the unsold portions and market them in Canada. Aitken angrily retorted that he and the other

> Canadian underwriters relied upon the capacity of the Western Canada Trust to market the bonds. Had there not been confidence in the Western Canada Trust, the underwriting would not have been taken. Now the Western Canada Trust must assume responsibility for the market, and only by assuming responsibility will results be achieved.
>
> . . .You will forgive me for my attitude, but I must confess I could have placed every dollar of the Canada Iron underwriting in Canada if I had wanted to do so . . . The Western Canada Trust has got to clean up the Canada Iron underwriting . . . It is useless to talk about a market in Canada. It is known here that the bonds are at a discount in London, and it would be too much of a factor against us in marketing our bonds. It must be done in London.[64]

IV

In 1909, Aitken moved from underwriting industrial mergers to becoming a merger promoter and financier. Within a 12-month period he would promote three of the largest and most significant industrial mergers of that age. In August of 1909, an amalgamation of 10 cement companies to be called the Canada Cement Co., with a total authorised capital of $38,000,000, was incorporated. Its securities were issued in both Canada and Britain. Two months later, the Canadian Car & Foundry Co., a merger of Canada's three largest rolling stock manufacturers capitalised at $16,000,000, was floated entirely on the London capital market. The following June, the Steel Co. of Canada was incorporated with a total authorised capital of $35,000,000; almost all of its securities were floated in London.[65] Aitken contracted with City firms to handle the initial London issues of all three companies.

In the first Canada Cement flotation of October 1909, Aitken was thoroughly put off by the incompetence of the Canadian Agency. He had decided to engage this firm rather than Western Canada Trust because of its connections to the Bank of Montreal, whose directors were supporting the Canada Cement merger. Furthermore, the Canadian Agency had conducted more Canadian flotations than any other City firm since it was established in 1906. Initial investor response was quite good, but within a few weeks the whole issue became 'stuck', and the price of Canada Cement shares began to plummet. Aitken sent his new Montreal office manager, Izaak Killam, to London to find out what was going wrong. A few days after his arrival in London, Killam reported to Aitken that the Canadian Agency had been too concerned about keeping all the underwriting profits for itself, thereby risking the success of the entire issue. As a consequence, envious City firms that had been left out of the share issue refused to recommend the purchase of Canada Cement shares to their many clients. As the Canadian Agency was capable of causing even greater damage if it was dropped in the middle of the issue, Killam urged Aitken to continue to allow the firm to complete the cement issue. He recommended, however, that future flotations be stewarded by a different issue house.[66] After Killam's investigation, Aitken in his turn concluded that greed and perhaps incompetence were at the root of the problem:

> I think if the Canada Agency knew how to do its work . . . the weakness in cement in England would not have arisen. I think the mistake of the Canadian Agency was made in not generally distributing the underwriting.[67]

The news of the London cement issue reverberated across the Atlantic, and Canada Cement shares became increasingly difficult to sell in the Canadian market as well. Having just merged the three largest rolling stock manufacturers in Canada at the same time, Aitken decided it would be best to float the consolidation's entire issue in Britain. This would ensure that his cement shares would not be further squeezed at home. This time, he retained Benn and his Western Canada Trust Co. to head up the issue.[68] The November issue of £483,000 worth of

Canadian Car & Foundry preference shares turned out to be a great success, in part because of the broad circle of City financiers with which Benn was connected and his decision to distribute the underwriting widely. After the flotation, Benn told Aitken the advantages which his group offered in future issues: 'I do not wish to . . . appear boastful but at the moment no Canadian Industrial will get a good reception if our group are [*sic*] unfriendly towards it'.[69]

Aitken was very gratified with the ability of Benn and his City group to sell the Canadian Car issue, but he was far less satisfied with the exorbitantly large profit they extracted for their services. Western Canada Trust raked in at least £126,000, while Benn in his personal capacity collected more than £10,000, based on the minimum market value of common shares that each received in payment for services.[70] As a consequence, Aitken and his Canadian underwriting partner, Edward Wood, found that a significant portion of the ordinary share profits they had expected to receive were 'taken' by the London issue house and its underwriting syndicate.[71] As Aitken complained in a letter to Wood:

> I cannot for the life of me see how the profit is [so] restricted. . . . I think I had better leave for England . . . and look things up over there. It seems to me some of our friends are too hungry.[72]

The £925,000 flotation of the Steel Co. of Canada the following July was a similar success, the bonds selling at a premium of two and a half per cent. Again, however, Benn and his City colleagues exacted a high fee for their services.[73]

Aitken's dissatisfaction with the exorbitant ordinary share profits being retained by the City firms encouraged him to establish a branch of Royal Securities in the City to act as the house of issue in subsequent flotations. In July of 1910, when Aitken took charge of a £1,000,000 issue on behalf of Price Brothers & Co., one of Canada's largest pulp and paper enterprises, he went to London to conduct the issue personally.[74] Soon after his arrival, Aitken bought the controlling shares in Rolls-Royce with the profits he had made in his Canadian mergers. It was at this time that Aitken met with Alfred Northcliffe, a substantial shareholder in Rolls-Royce. Noting 'Aitken's quick judgment' during the takeover, Northcliffe 'at once arranged to meet Aitken' and 'offered his co-operation in Rolls-Royce affairs'. The close business relationship which soon developed between Aitken and Baron (later Viscount) Northcliffe did much to enhance the young Canadian's reputation in the City. This, plus his close friendship with Rudyard Kipling for whom Aitken had reserved a $50,000 share in the Steel Co. of Canada underwriting, assured him a place in some of the more traditional and conservative segments of English society.[75]

Aitken, deciding to remain a little longer in London during the autumn of 1910, soon established the Royal Securities office in the heart of the City. He waited until the capital market was less congested and then floated the Price Brothers issue in November. The issue was oversubscribed by 25 per cent and sold at a premium above the prospectus price. In addition, Royal Securities, as the principal house of issue, retained most of the promotional and underwriting profit.[76]

An unqualified City financial success, Aitken then changed tack entirely and arranged an entry into British politics. By utilising his City acquaintances, especially his connections to Unionist politicians such as Benn and Law, and by making substantial donations to the Unionist Party, Aitken soon was in the race.[77] His political bid was announced in laudatory fashion in the Canadian press:

> Another of Canada's sons is about to enter Imperial politics. The cable last week announced that Mr. W.M. Aitken, president of the Royal Securities Corporation, had been offered a Unionist candidature in England. It has not hitherto been known that Mr. Aitken had any political leanings whatever. His activities have been confined almost completely to the financial field, in which he has made an almost unparalleled success . . . He is but 31 years of age, yet for the last year has been ranked among the millionaires . . . His presence in England at the present time is due to the Price Brothers issue . . . which . . . he has succeeded in marketing, notwithstanding somewhat adverse [market] conditions.[78]

Aitken became a Member of Parliament in December of 1910 and made his permanent home in England as a consequence. To his own surprise, Aitken found politics dull compared to high finance. Rarely appearing in Parliament, he continued to devote the majority of his time and effort to investment banking.[79] He did use his political position to great advantage in the business sphere, however, as it gave him considerable credibility. Izaak Killam began to take care of the day-to-day operations of Royal Securities' London office, while Aitken hustled existing Canadian companies for their new issue business or sought new possibilities for putting together further consolidations. In March of 1911, Royal Securities floated £250,000 worth of Bell Telephone of Canada bonds at a premium of two per cent above their par price. The issue was wildly successful; subscribed twice over, the list was closed early.[80] In June of 1911, the same month he received his knighthood, Aitken issued a further £200,000 worth of Steel Co. of Canada preferred shares. This issue, however, was more difficult to sell than previous issues. In fact, the London market had become saturated with Canadian industrial securities; consequently, Aitken began temporarily to avoid industrial issues in favour of Canadian utility and grain transportation mergers. This remained the case until 1913, when Aitken sponsored two further issues of Canadian Car & Foundry in London.[81]

By that year, Aitken had become president of Western Canada Trust. Although he had been upset by the firm's rapaciousness when it handled his industrial issues in 1909 and 1910, Aitken had nonetheless purchased shares in Western Canada Trust and had become one of its directors shortly after entering Parliament. Upon taking control of the firm, Aitken used it as another vehicle for his expansion in London. In early 1914, he merged Western Canada Trust with the Canadian & Empire Trust Co. and increased the new firm's capital to £700,000, making it one of the larger institutions of its type in the City.[82]

The exigencies of war eventually would lead Aitken out of industrial finance altogether. After the war began, he became the government's official eyewitness with the Canadian troops on the front in France through 1915. He received a peerage in 1916, helped the British Treasury raise £1,000,000,000 through a bond issue in 1917, and became Minister of Information responsible for war propaganda in 1918.[83] At this time, he resigned his presidency of Royal Securities, allowing Izaak Killam to succeed him. Within a few years he had sold most of his shares in Royal Securities, mainly to Killam, thus ending his career as an industrial financier.[84]

V

Max Aitken, like a number of Canadian financiers skilled in stockbroking, bond selling, and utility promotions, took advantage of the growth of manufacturing enterprises during the Laurier boom to become an industrial investment banker with transatlantic operations. The zenith of this activity coincided with the great Canadian merger wave of 1909–13, in which British and European investors, through London flotations, directed more than £22,000,000 to Canadian manufacturing companies (see appendix).

Canadian financiers set up branch offices in London to negotiate the terms under which these industrial issues would be floated by City firms and to oversee the flotations. Eventually, some firms began to conduct the flotations themselves. Aitken's experience is instructive in this respect. Motivated by his unhappiness over the manner in which the Canada Iron and Canada Cement flotations were conducted and his subsequent displeasure concerning the profits taken by the London investment houses, Aitken established a branch of Royal Securities in the City. He also bought into and eventually directed Western Canada Trust, the firm he most relied upon for his first Canadian Car & Foundry and Steel Company of Canada flotations in 1909 and 1910. Starting with the November 1910 flotation of Price Brothers' bonds, Aitken began to conduct his own industrial flotations in London. As he could now ensure that his industrial client's interests were paramount, he was in a superior position to maximise his own profits in every individual issue.

This golden age of Anglo-Canadian finance came to an abrupt end in 1913–14. The recession of 1913 spelled failure for several large Canadian industrial flotations. Then the Great War, coupled with Britain's decision to restrict new capital issues, virtually terminated London's utility as a capital market for Canadian industry. As an alternative, Canadian financiers increasingly looked to the United States and even Canada itself for further issues of industrial securities. Although many financiers and their industrial clients thought that there would be a return to the London capital market after the Great War, this did not occur. The war had made Britain poorer and her financial resources, including the new issue market, had to be shepherded carefully even after the surrender of Germany. By 1920, it was obvious to all Canadian financiers that London was no longer the mecca for industrial capital it had once been.

NOTES

The author would like to thank Geoffrey Jones, Duncan McDowall and Andrew Poslums for their helpful comments

1. G.P. Marchildon, 'British Investment Banking and Industrial Decline before the Great War: A Case Study of Capital Outflow to Canadian Industry', *Business History*, Vol 33 (1991).
2. See E.P. Neufeld, *The Financial System of Canada: Its Growth and Development* (New York, 1972), Ch 14, for a brief review of Canadian investment and underwriting firms. Contemporary information on Canadian securities firms was obtained in J. Stackhouse's 'Bay Street's Day of Reckoning', *The Globe and Mail Report on Business Magazine* (Aug. 1990), pp. 23–30. It should be noted that, by 1990, the largest Canadian commercial banks had bought majority control in RBC Dominion Securities, Wood Gundy, and Nesbitt Thomson and, at that time, were considering removing the high-cost, low-profit brokerage branches from their operations. In fact, Richardson Greenshields was the last major independent brokerage house in Canada by 1990.
3. J Fleming, 'The Misfortunes of Michael Sanderson', *The Globe and Mail Report on Business Magazine* (April 1990), p. 27.
4. M.C. Urquhart, 'New Estimates of Gross National Product, Canada, 1870–1926. Some Implications for Canadian Development', in S.L. Engerman and R.E Gallman (eds.), *Long-Term Factors in American Economic Growth* (Chicago, 1986); M.C Urquhart, 'Canadian Economic Growth, 1870-1980', Department of Economics

Discussion Paper No. 734, Queen's University, 1988; M. Altman, 'A Revision of Canadian Economic Growth: 1870–1910 (A Challenge to the Gradualist Interpretation)', *Canadian Journal of Economics*, Vol. 20 (1987); M. Altman, 'Revised Estimates of Real Canadian GNP and Growth and the Pre and Post World War Two Volatility of the Canadian Business Cycles with some Comparison to the American Record', Department of Economics, University of Saskatchewan, 1989; G.P. Marchildon, 'Promotion, Finance and Mergers in Canadian Manufacturing Industry' (unpublished Ph.D. thesis, London School of Economics, 1990), Ch. 1.

5. D. McDowall, *Steel at the Sault: Francis H. Clergue, Sir James Dunn, and the Algoma Steel Corporation* (Toronto, 1984), pp. 95–112; R. Michie, 'Dunn, Fischer & Co. in the City of London', *Business History*, Vol. 30 (1988); Marchildon, 'British Investment Banks'.
6 *Monetary Times*, 6 May 1911, p. 1812
7. This discussion draws upon Marchildon, thesis, Ch. 2.
8. On the significance of utility financing in Canada, see C. Armstrong and H.V. Nelles: *Monopoly's Moment: The Organization and Regulation of Canadian Utilities, 1830–1930* (Philadelphia, 1986), and *Southern Exposure: Canadian Promoters in Latin America and the Caribbean, 1896-1930* (Toronto, 1988), D. McDowall, *The Light: Brazilian Traction, Light and Power Company Limited, 1899–1945* (Toronto, 1988).
9. More detailed case studies of three of the most prominent Canadian promoter-lawyers and their methods of operation can be found in G.P. Marchildon: 'The Role of Lawyers in Corporate Promotion and Management: A Canadian Case Study and Theoretical Speculations', *Business and Economic History*, 2nd series, Vol. 19 (1990); and 'International Corporation Law from a Maritime Base: The Halifax Firm of Harris, Henry and Cahan', in C. Wilton (ed.), *Beyond the Law: Lawyers and Business in Canada 1830 to 1930* (Toronto, 1990).
10. The merger flotations in the appendix refer to the issues of companies which had been created through a consolidation at any time between 1905 and 1913. A series of these manufacturing mergers can be found in Marchildon, thesis, Appendix D.
11. See R.C. Michie, 'The Canadian Securities Market, 1850–1914', *Business History Review*, Vol. 62 (1988), for an analysis of the size of the Canadian market.
12 See E.P. Neufeld, *The Financial System of Canada: Its Growth and Development* (New York, 1972), Ch. 14, for a brief review of the evolution of Canadian investment houses.
13. The early history of Dominion Securities is briefly reviewed in M. Bliss, *A Canadian Millionaire: The Life and Business Times of Sir Joseph Flavelle, Bart., 1858–1939* (Toronto, 1978), pp. 60–69. *Monetary Times*, 3 Feb. 1905, p. 1022.
14. *Monetary Times*, 24 September 1910, p. 1331.
15. Neufeld, *The Financial System of Canada*, p. 487.
16. Beaverbrook Papers, House of Lords Record Office, Historical Collection Number 184 (hereafter BBK), A/31/Benn, letter, Aitken to Benn, 24 April 1909.
17. Marchildon, 'British Investment Banking and Industrial Decline', p. 83.
18. This was evident in the Dominion Steel Corporation's issue of £1,000,000 worth of preference shares in London in April 1912. Although Wood was responsible for the merger and had the London office of Dominion Securities at his disposal, the London flotation was conducted by Sperling & Co.: London Stock Exchange records at the Guildhall Library (hereafter LSE), MS 18000/163B/331, Dominion Steel Corporation Ltd., application for listing.
19. Marchildon thesis, Ch. 3, and 'International Corporate Law', pp. 211–14. The early bond selling activities of the Royal Securities Corporation are canvassed in C. Armstrong, 'Making a Market: Selling Securities in Atlantic Canada before World War I', *Canadian Journal of Economics*, Vol. XIII (1980).
20. BBK, A/16/Nesbitt, 1907 correspondence between Aitken and A.R. Nesbitt; *Monetary Times*: 10 Oct. 1908, p 597; 15 July 1911, p. 321.
21. LSE, MS 18000/155B/494, prospectus for £410,000 issue of Canadian Steel Foundries Ltd., bonds, 10 March 1911, London.

22. *Monetary Times*, 15 July 1911, p. 321; 25 Nov. 1911, p. 2220; 11 Sept. 1925, p 30; 25 Nov. 1927, p. 32; 23 Dec. 1927, p. 25; 3 Feb. 1928, p 26; 3 Aug. 1928, p. 25; 5 April 1929, p. 23.
23. BBK: letter, Grant to Aitken, 18 May 1908; letter, De Gruchy to Grant, 19 May 1908.
24. Grant's early manufacturing mergers included Carriage Factories (Sept. 1909), Dominion Canners (Feb. 1910), and the Canada Machinery Corporation (July 1910): Marchildon, thesis, pp. 267–72.
25. *Canadian Journal of Commerce*, 10 May 1913, p 677; 16 Aug. 1913, p. 1261.
26. *Monetary Times*, 25 Feb. 1911, p. 2236; 11 March 1911, p. 1033.
27. *Canadian Journal of Commerce*: 16 Aug 1913, p. 1261; 4 Oct. 1913, p 1623.
28. *Canadian Journal of Commerce*, 25 April 1914, p. 781.
29. *Monetary Times*, 1 June 1912, p. 2247.
30. LSE, MS 18000/171B/299, Prospectus of $1,437,500 Preference share issue, London, 16 June 1913; Memorandum of Agreement between C. Meredith & Co. and the Dominion Glass Co. Ltd., 12 June 1913.
31. *Monetary Times*, 19 May 1905, p. 1546; 15 April 1911, p. 1514.
32. LSE, MS 18000/132B/446, Amalgamated Asbestos Corporation, Limited, application for quotation of $2,017,000 bonds; letter, Kitcat & Aitken to Secretary, Share and Loan Department, Stock Exchange, 22 June 1910.
33 *Monetary Times*, 18 Dec. 1909, p. 2515; 14 May 1910, p. 2036; 15 April 1911, p. 1514.
34. Forget's financial influence was powerful enough to make him president of the East Canada Power and Pulp Co. *Canadian Journal of Commerce*, 24 March 1911, p. 396.
35. *Monetary Times*, 4 March 1911, p. 917.
36. I have relied on R. Sweeney, *A Guide to the History and Records of Selected Montreal Businesses Before 1947* (Montreal, 1978), pp. 115–16, for the early history of Greenshields & Co.
37. *Monetary Times*, 15 Oct. 1910, p. 1643; 4 March 1911, p. 917 and p. 932; 3 June 1911, p. 2234.
38 BBK, A/32/Lehigh, letter, Aitken to Benn, 12 Jan. 1909.
39. BBK, A/32/Lehigh, letter, Aitken to Benn, 12 Jan. 1909.
40. For the existence of these London branch offices, I relied on the information provided by H.W. Sites, *Investment Bankers and Brokers in the United States and Canada* (New York, 1914), pp. 168–79, 440–50, in which all North American and overseas branch offices of investment banking and brokerage houses with head offices in Montreal and Toronto were listed.
41. LSE, various Canadian industrial companies applications for listing, MS 18,000; and MS 18000/145B/744, Amalgamated Asbestos Corporation Ltd., list of common shareholders, Montreal, 23 Nov. 1909.
42. F.W. Field, *Capital Investments in Canada* (Toronto, 3rd. ed. 1914), pp. 279–81.
43. E.R. Wood quoted in *Monetary Times*, 8 Jan. 1915, p. 16
44. *Monetary Times*, 12 Feb. 1915, p. 9.
45. LSE, MS 18000/186B/266, Canadian Vickers Ltd., Prospectus for a 1,000,000 Debenture Issue, London, 16 Aug. 1916, letter, Linton, Clarke & Co. to Secretary, Committee for General Purposes, London Stock Exchange, 7 Aug. 1916; letter, the Secretary of Treasury, Whitehall, to Secretary, London Stock Exchange, 9 Aug. 1916.
46. *Monetary Times*, 13 April 1915, p. 9; 30 April 1915, p. 5
47. *Monetary Times*, 21 Feb. 1919, p. 52; 28 Feb. 1919, p. 52; 14 March 1919, p. 47.
48 *Monetary Times*, 3 Jan. 1919, p. 39.
49. The majority of Aitken's early business papers mainly related to the running of the Royal Securities Corporation and the Montreal Trust Co. are contained in Series A, Canadian Correspondence, 1903–1916.
50. BBK, A/11/Ames, 1907 correspondence; A/8/Farrell, letter, Farrell to Aitken, 12 Oct. 1906; A/9/misc H, 1906 correspondence between J.S. Harding and Aitken.
51. BBK, A/9/misc H, letter, J.S. Harding to Aitken, 29 Dec. 1906
52. BBK, A/16/Nesbitt, letter, Nesbitt to Aitken, 24 July 1907.
53. BBK, A/16/Nesbitt, 1907 correspondence between Aitken and Nesbitt.

54. BBK, A/6/misc N-P, letter, Aitken to G.F. Pearson, 14 Aug. 1905; A/6/misc M, letter, Aitken to T.G. McMullen, 29 Aug. 1905, A/5/misc G-H, letter, Harding to Aitken, 26 Dec 1906; A/9/misc G, letter, Aitken to Gossler, 11 Jan. 1906; A/9/misc O-Q, letter, Aitken to Plummer, 16 Jan. 1906; A/8/misc B, letter Bruce to Aitken, 31 Jan. 1906.
55. BBK, A/10/misc T, letter, Aitken to Gunn, 3 May 1906 (concerning the Tacoma, Washington, proposition); A/9/misc O-Q, letter, Patterson to Aitken, 24 Sept. 1906 (concerning the Hamilton-Galt railway).
56. BBK, A series, 1909 and 1910 correspondence; G/19/Stelco, various correspondence, G/19/Canada Cement, various correspondence: G/3/C.H. Cahan, various correspondence.
57. BBK, A/21/misc D, letter, G.E Drummond to Aitken, 6 July 1907.
58. BBK, A/19/Adamson, letter, A.J. Adamson to A.M. Grenfell, 28 Oct. 1908; A/20/misc C, letter, Thomas Cantley to Aitken, 20 Oct. 1908.
59. BBK, A/26/Mc or Mac, letter, Aitken to Short McMaster, 17 Oct. 1909.
60. 6I. BBK, A/21/misc F, letter, Aitken to Granger Farwell, Farwell Trust Co., Chicago, 24 Dec. 1908.
61 BBK, A/20/misc C, letter, Aitken to Cantely, 5 Nov. 1908.
62. BBK, A/31/Benn, letter, Benn to Aitken, 26 Feb. 1909.
63. BBK, A/19/Benn, telegrams, Aitken and Benn, 18 Dec. 1908, 21 Dec. 1908, 30 Dec. 1908, A/31/Benn, letter, Benn to Aitken, 28 Jan. 1909.
64. BBK, A/30/Benn, letter, Aitken to Benn, 26 April 1909.
65. BBK, G/19/early financial circulars, prospectuses of Canada Cement, Canadian Car & Foundry, and the Steel Company of Canada.
66. BBK, A/33/D misc, letter, A.E. Dyment to Aitken, 1 Nov. 1909, A/36/Killam, letters, Aitken to Killam, 3 Nov. 1909, Killam to Aitken, 19 Nov. 1909; A/31/Benn, letter, Aitken to I.H. Benn, 3 Nov. 1909.
67. BBK, A/38/MacLeod, letter, Aitken to W.M. MacLeod, 18 Nov. 1909.
68. BBK, B/19/financial circulars, prospectus of the Canadian Car & Foundry Co. Ltd.; A/39/Rhodes Curry & Co., letter, N. Curry to Aitken, 18 Oct. 1909; A/39/Benn, letter, I.H. Benn to Aitken, 23 Oct. 1909.
69 BBK, A/31/Benn, letter, I.H. Benn to Aitken, 13 Nov. 1909.
70. See Table 3, Marchildon, 'British Investment Banks'.
71. BBK, A/52/E.R. Wood, letters, Aitken and E.R. Wood, 30 March 1910, 31 March 1919, 1 April 1910, and telegram, Aitken to E.R.Wood, 30 March 1910.
72. BBK, A/52/Wood, letter, Aitken to E.R Wood, 1 April 1910.
73. While he was waiting, Aitken actively promoted the securities of the Steel Company of Canada. He walked the streets of London recounting the story of the steel merger, describing the company's tremendous potential. W Kilbourn, *The Elements Combined· A History of the Steel Company of Canada* (Toronto, 1960), p. 79; BBK, G/19/Stelco, 1910 correspondence
74. Lord Beaverbrook, *My Early Life* (Fredericton, 1965), p. 174.
75. Taylor, *Beaverbrook*, pp. 43–4.
76. *Canadian Journal of Commerce*, 18 Nov. 1910, p. 741; *Monetary Times*, 26 Nov. 1910, p. 2236.
77 Taylor, *Beaverbrook*, p. 41
78. *Monetary Times*, 19 Nov. 1910, p. 2127
79 Taylor, *Beaverbrook*, pp. 52–7.
80. *Monetary Times*, 24 June 1911, p. 2510.
81 *Monetary Times*, 7 Sept 1912, p 416, 28 Sept. 1912, p. 503; 31 May 1913, p. 937; 15 Nov. 1913, p 777. £205,400-worth of Western Canada Power bonds were issued in London in March 1912. See Field, *Capital Investments*, p. 274.
82 *Monetary Times*, 20 Feb. 1914, p. 396.
83. Taylor, *Beaverbrook*, pp. 86–156.
84. *Monetary Times*, 14 Jan. 1916, p. 7, 1 Nov. 1918, p. 26.

APPENDIX

LONDON FLOTATIONS OF CANADIAN MANUFACTURING ISSUES, 1905–14

Mo.	Year	Manufacturing Company	Amount of Issue (£000)	Security	Issued at	Merger
Mar	1905	Imperial Paper Mills	60	Deb 6%	par	
May	1905	Western Cdn Pulp & Paper	300	Pref 6%	par	
Aug	1905	Western Canada Cement	225	Bond 6%	par	
Feb	1906	Cdn General Electric Co.	220	Ord	142.5	
Jun	1906	Canadian Pacific Suphite	83	Ord	83	
Jun	1907	Annapolis Iron Co.	140	Bond 5%	92	
Oct	1907	Cdn General Electric Co.	400	Pref 7%	par	
Jan	1908	Penmans Ltd.	300	Bond 5%	97.5	Merger
Jul	1908	Penmans Ltd.	170	Pref 6%	par	Merger
Jul	1908	Western Canada Flour	225	Bond 6%	par	
Oct	1908	Imperial Tobacco Co.	822	Pref 6%	–	Merger
Oct	1908	Canada Iron Corp.	364	Bond 6%	99.5	Merger
Jan	1909	Montreal Cotton Co.	200	Deb 5%	97.5	
Feb	1909	British-Cdn Asbestos Co.	144	Bond 5%	95	
Feb	1909	National Drug & Chemical	300	Pref 6%	par	Merger
Apr	1909	Lake Superior Corp.	1029	Bond 5%	90	
Jul	1909	Dominion Iron & Steel	1200	Bond 5%	93	
Jul	1909	Standard Chemical Co.	100	Bond 5%	98.5	
Oct	1909	Canada Cement Co.	360	Pref 7%	93	Merger
Nov	1909	Canadian Car & Foundry	648	Pref 7%	95	Merger
Jan	1910	Canada Cement Co.	206	Deb	par	Merger
Feb	1910	Canadian Car & Foundry	483	Bond 6%	par	Merger
Feb	1910	Amalagamated Asbestos	420	Bond 6%	92.5	Merger
Apr	1910	Cdn Western Lumber Co.	1500	Deb 5%	88	Merger
May	1910	Nova Scotia Steel & Coal	309	Bond 5%	95	
May	1910	Cdn Oil Prod & Refining	75	Ord	par	
Jun	1910	Dominion Sawmills	800	Deb	95	Merger
Jul	1910	Steel Co. of Canada	925	Bond 6%	102.5	Merger
Jul	1910	National Drug & Chemical	49	Pref 6%	par	Merger
Aug	1910	Noiseless Typewriter Co.	20	Pref 7%	par	
Oct	1910	Cdn North Pacific Fisher.	400	Deb 5%	86	Merger
Nov	1910	Lake Superior Iron & Chem.	616	Bond 6%	par	
Nov	1910	Cdn Mills & Timber	100	Bond 6%	par	
Nov	1910	Price Brothers & Co.	1000	Bond 5%	87	
Nov	1910	Cdn North Pacific Fisher.	400	Bond 5%	86	Merger
Dec	1910	Western Canada Envelope	12	Ord	par	
Dec	1910	Dominion Sawmills	800	–	95	Merger
Mar	1911	Cdn Steel Foundries	411	Bond 6%	par	Merger
Mar	1911	P. Burns & Co.	200	Bond 6%	par	
Mar	1911	Span River Pulp & Paper	267	Bond 6%	98.5	
Mar	1911	Lake Superior Corp.	719	Bond 6%	97	
Mar	1911	Standard Chemical Iron	200	Pref 7%	par	Merger
Mar	1911	Bell Telephone of Canada	345	Bond	–	
Apr	1911	Canadian Cottons Ltd.	370	Bond 5%	93	Merger
May	1911	Cockshutt Plow Co.	750	Pref 7%	102	Merger
May	1911	Ames-Holden-McCready	206	Bond 6%	101	Merger
Jun	1911	Belding, Paul & Corticelli	154	Deb 5%	90	Merger

LONDON FLOTATIONS OF CANADIAN MANUFACTURING ISSUES, 1905–14

Mo.	Year	Manufacturing Company	Amount of Issue (£000)	Security	Issued at	Merger
Jun	1911	Steel Co. of Canada	200	Pref 7%	94	Merger
Jun	1911	Dominion Sawmills	1028	Pref 7%	97.5	Merger
Jun	1911	Mond Nickel Co.	250	Deb 5%	par	
Jul	1911	Cdn Pacific Lumber Co.	350	Bond 6%	93	Merger
Nov	1911	Wpg Paint & Glass Co.	82	Pref 7%	par	
Dec	1911	B C. Fisheries	125	Pref 7%	par	
Feb	1912	Nova Scotia Steel & Coal	210	Bond 5%	–	
Apr	1912	Dominion Steel Corp.	1000	Pref 6%	95	Merger
May	1912	Algoma Steel Corp.	1130	Bond 5%	93	
Jun	1912	Calgary Brewing & Malt.	247	Bond 5%	86	
Jun	1912	Riordan Pulp & Paper	317	Pref 7%	96	
Oct	1912	B.C. Breweries	583	Bond 6%	95	Merger
May	1913	Phoenix Bridge & Iron	154	Bond 6%	96	
May	1913	Phoenix Bridge & Iron	164	Ord	50	
May	1913	Canadian Car & Foundry	185	Pref 7%	114	Merger
Jun	1913	Dominion Canners	154	Bond 6%	99.5	Merger
Jun	1913	Dominion Glass Co.	296	Pref 7%	97.3	Merger
Jun	1913	Imperial Tobacco Co.	417	Pref 6%	par	Merger
Jun	1913	National Drug & Chemical	200	Pref 6%	par	Merger
Jul	1913	Brit N. America Tobacco	50	Ord	–	
Jul	1913	Canadian Car & Foundry	308	Bond 6%	107	Merger
Jul	1913	J.H. Sherrard Manufact.	150	Pref 7%	par	
Oct	1913	Nova Scotia Steel & Coal	200	Deb 6%	98	
Oct	1913	San Martin Manufact.	150	Ord	par	
Nov	1913	Dominion Steel Corp.	700	Note 6%	97	Merger
Nov	1913	Span. River Pulp & Paper	300	Note 6%	96	
Feb	1914	Algoma Steel Corp.	500	Note 6%	96.5	

Source: Derived from F.W. Field, *Capital Investments in Canada* (Toronto, 3rd ed. 1914), pp. 11, 259–81, and G.P. Marchildon, 'Promotion, Finance and Mergers in Canadian Manufacturing Industry' (unpublished Ph.D. thesis, London School of Economics, 1990), pp. 262–72.

Canadian Promoters and American Markets: Regulating the Irregular, 1945–55

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Unregulated markets have an irresistible allure for securities traders. However much regulators try to clamp down on domestic activities there remain international dealings beyond the jurisdiction of a single state.[1] Canadian stock promoters, for instance, discovered the charms of United States markets in the mid–1940s when they began to feel the regulatory pinch at home. Securities trading in the US was then more tightly controlled than in Canada, but the long-distance telephone was rapidly creating a continent-wide market. American regulators found it difficult to force foreigners to comply with their laws, while Canadian authorities complained of lack of jurisdiction or of problems of proof in dealing with offenders. Eventually United States officials became sufficiently annoyed that the problem threatened to disrupt the broader relations between the two countries.

In the decade after World War II a sizable band of promoters in Toronto were hawking highly speculative, sometimes downright fraudulent, mining and oil stocks in the US. Why, asked angry and incredulous American officials, did Canada permit the sale of thousands of dollars' worth of shares in the US in violation of both state and federal laws? Why, asked Canadian diplomats in Washington, were these scoundrels allowed to imperil the friendly relations between the two countries? Why were Canadian securities being allowed to acquire a dubious reputation which might make it difficult for even the soundest enterprises to tap US capital markets?

This situation arose because of differing regulatory regimes in the two countries at a time when North America was becoming a single financial market place. Though the telephone was making it increasingly easy to market securities anywhere on the continent, US regulators were determined that everyone should play by their rules when selling south of the border. Yet many Canadians believed that speculative investments in resource stocks were both necessary and desirable if their country was to be developed as rapidly as possible. And there were legions of Americans quite willing to take a flyer in the hopes of striking it rich, which made it very tempting for Canadian promoters to peddle their wares in the US.

Canadian regulators argued that special problems faced them when trying to control brokers selling abroad. Jurisdiction over securities trading lay not with the federal government but with the provinces through their control of 'property and civil rights'; criminal sanctions against fraud and market manipulation, defined by Ottawa, were rarely applied to securities dealings. Provincial officials, however, insisted that their jurisdiction did not extend beyond their boundaries, and they had no formal channels of communication with foreign governments. When American regulators were dissatisfied they might demand action by Ottawa but were often told to take up their concerns with the provinces.

The issue came to a head in 1951 after a wave of selling by Canadian promoters in the US. Washington insisted that the Extradition Treaty between the two countries should be amended, so that blatant offenders could be hauled before the American courts. Eventually the Canadian authorities rather reluctantly agreed because of the risk of losing American goodwill. In exchange Canadians secured the right to float small issues of securities in the US under rules less stringent than those applied to other countries.[2] But these arrangements failed to operate satisfactorily and soon fell into disuse. Nor did the threat of extradition prove effective in curbing the worst excesses of the Toronto promoters. Differences in the regulatory environments between the two countries remained to plague their relations from time to time in the years ahead.

Following the stock market crash of 1929, demands were heard across North America for tighter regulation of securities markets. Many Canadians had participated in the speculative frenzy of the late 1920s and were quite prepared to blame their losses upon misconduct by stock brokers and market operators. Early in 1930 the principals of the five largest Toronto-based mining brokerages were charged with conspiracy to defraud their clients and with operating 'bucket shops'.[3]

Such scandals provoked the calling of a conference of Canadian provincial officials to consider tightening the regulations governing securities trading. A number of provinces had already passed Security Frauds Prevention Acts in the late 1920s; these acts required the registration of brokers and salesmen and prohibited various practices such as making outlandish promises to clients and securing unconscionably large commissions. Agreement was quickly reached that this legislation ought to be beefed up and made uniform in all provinces.[4] During the 1930s the Ontario Securities Commission (OSC) emerged as the key regulatory body in Canada. By 1934 the OSC had cancelled the registration of one Toronto 'boiler-room' which had run up $16,000 in long-distance charges over a two-month period, using 23 telephones to market mining shares across North America.[5]

In the United States the financial community, led by the New York Stock Exchange, was initially successful in resisting tighter regulatory measures after the crash of 1929. But the continuing decline in share prices and the election of Franklin D. Roosevelt in 1932 created a new mood, and Congressional investigations in 1933–34 revealed sorry tales of market manipulation and insider dealing. New federal regulatory legislation, which was superimposed upon existing state 'blue-sky' laws, took a different approach from the Canadian provincial measures. The Securities Act of 1933 required issuers of new securities to disclose all 'material' facts to the public, while the Securities Exchange Act of 1934 created the Securities and Exchange Commission (SEC) and gave it broad regulatory powers to control securities trading and stock markets 'in the public interest and for the protection of investors'. All issues were now required to be registered by the SEC, which demanded full disclosure.[6] Within a few months Canadian officials noted the arrival of a number of expatriate Americans, driven out by the new stricter regimen at home, and before long the SEC began complaining about the sale of unregistered Canadian mining shares in the US.[7]

Depression and war ensured that no large sums were raised abroad by Canadians between 1930 and 1945, but once the post-war boom got under way Canada's heavy dependence upon external finance increased dramatically. Between 1945 and 1955 long-term foreign investment in the country increased by over 90 per cent, from $7,092,000,000 to $13,527,000,000. Over 80 per cent of those new investments, worth $5,305,000,000, were owned by residents of the United States of America. Canadians recognised the vital importance of American capital to speedy economic development. Nowhere was this flow of funds more important than in the resource sector, as over 43 per cent of this American investment (nearly $2,300,000,000) went into mining, smelting, petroleum and natural gas.[8]

Popular mythology in Canada heartily endorsed natural resource exploration financed through the sale of highly speculative shares. Canadian mining men were quite unapologetic about the odds against finding a commercial orebody. A respected mining executive invoked an oft-repeated analogy when he told applauding members of the Ontario Prospectors and Mine Developers Association in 1939:

> Let the government recognize prospecting for what it is: an outright gamble . . . Surely it is better that a man should gamble on a prospect than on a racehorse or an Irish Sweepstake. On this, if

> you lose, you lose. When money is gambled on prospects, if you lose, that money stays in Canada and more is known about mining country.[9]

Beginning in 1942, the market for Canadian stocks began to emerge from wartime doldrums. On Bay Street in Toronto's financial district there appeared a group of brokers and promoters who made their livelihood selling highly speculative mining and oil shares in the 'over-the-counter' market.[10] Soon these stocks began to be widely touted by mail and telephone in the United States; the promoters simply ignored American laws, state and federal. One diplomat accurately reflected the attitude of many Canadian financial men when he complained that the SEC procedures were 'a perennial headache and the cost of registering small Canadian issues has been prohibitive'. State blue sky laws, he wrote, protected investors 'to a quite extraordinary degree. Canada as a young country has more undeveloped resources, and consequently there is a more liberal viewpoint in Canada in the regulation of the soliciting of "venture capital"'.[11]

Some of the larger mining companies did employ prospectors and geologists in their exploration departments, financing this through retained earnings. In addition, there were a few well-known and reputable entrepreneurs who raised funds from small syndicates of backers to investigate promising properties before seeking public financing. But most mining and financial men were convinced that the only way that Canadian mineral reserves could be expanded rapidly was through promoters 'grubstaking' independent prospectors to comb the Canadian countryside in search of mineralisation. These promoters generally raised their funds through the sale of highly speculative shares in public companies. Only part of the money was actually utilised for exploration, and the likelihood of any given venture discovering a commercial ore-body was pitifully low. Yet there were enough giant successes to keep small investors eagerly lining up to buy these stocks. Even if a bonanza was not discovered, the sophisticated hoped to take profits on rising markets created by good news or rumours from the mining camps, or even to benefit by going 'short' in falling markets if optimism proved unfounded.[12]

In the 1940s any Canadian promoter who controlled a seemingly promising mining claim (or just a worthless piece of 'moose pasture') could easily incorporate a company with the right to issue 3,000,000 shares and immediately grant himself up to one-third of them in exchange for the property. All but 10 per cent of those 1,000,000 shares had to be placed in escrow under OSC rules, but the remaining

2,000,000 shares were available for sale to finance exploration and development by the company.[13] Normally the promoter would also receive options on this remaining stock which permitted him to 'take down' in succession three blocks of 300,000 shares each from the company treasury, typically at a cost of 5 cents, 7.5 cents and 10 cents respectively. The regulations also provided that the escrowed shares would be released on a one-for-one basis as stock was purchased from the treasury, so that by buying these 900,000 shares outright for $67,500 the promoter could acquire 1,900,000 resalable ('free') shares at an average cost of 3 cents each. Including any additional charges for 'grubstaking' a prospector, exploring the property and organising the company, the total cost of this stock to the promoter was unlikely to rise above 5 cents per share. Control of the 1,100,000 shares still left in the treasury remained with the insiders in the unlikely event that a commercial orebody was uncovered and control of the company's assets proved important.

The promoter would then turn to one of several dozen 'promotional' houses or 'blowers' on Bay Street to find buyers for the shares. There the 'stockees' worked the banks of telephones in the boiler-rooms, while 'writers' laboured at composing appealing, if fanciful, literature describing the latest sure thing to be sent to names culled from 'sucker lists'. On slow days salesmen might busy themselves sending out wires to 'mooches' across the continent, recommending that they buy at once in order not to miss a rising market. At other times they despatched false confirmations of unordered share purchases in hopes that the recipients might remit the money out of optimism or inattention, or tried to 'reload' previous buyers with additional stock. A high-powered campaign which was well-timed might secure prices up 90 cents per share for this low-priced stock.

Even with distribution costs as high as 40 per cent of gross revenues, that left a handsome profit. When it was decided that as many shares as possible had been pushed out, the insiders ceased to provide any support for the market by buying back small lots, whereupon prices usually collapsed completely. A shrewd operator would also arrange to siphon any funds left in the company treasury into his own pocket. Thus an energetic promoter who floated two or three such companies annually could prosper mightily, particularly when the demand for Canadian mining or oil shares was strong.[14]

At the 1944 annual meeting of the US National Association of Securities Administrators (which brought together state and federal regulators), Toronto brokers were singled out as the major source of securities frauds in North America. Amazed at the 300–400 per cent margins which promoters routinely charged on mining shares, one administrator asked, 'Do you mean to say that people can take markups like that in Canada without going to jail?' In the spring of 1945 the SEC reported that it believed Americans were losing as much as $1,000,000 per month to Canadian 'stockateers'.[15]

Particularly frustrating to the American regulators was that they could not force Canada to hand over offenders for trial on charges of violating state and federal securities laws because of the outdated Extradition Treaty between the two countries.[16] As early as 1942 the SEC had begun to press for amendments to the treaty to ensure complete coverage of all offences under the 1933 Securities Act. Eventually Canada's negotiators agreed, despite the fact that American laws were much more sweeping than the Canadian Criminal Code or the provincial regulations. This meant that an accused might be extradited to stand trial in the US for actions which were not illegal in Canada. When the implications of the new treaty became clear near-panic swept through the Canadian brokerage fraternity at the thought that they could face arrest for merely 'technical' offences, such as failing to register issues to be sold in the US.[17]

Strong protests were registered with Ottawa against the abandonment of the principle of dual criminality, that extraditable offences be crimes in both countries. So loud was the outcry against the extra-territorial application of US law that the Canadian government was forced to reconsider its position even though Congress had quickly ratified the new treaty.[18] Nothing more was done until the summer of 1945 when, under renewed pressure from Washington, Canada agreed to a protocol to the old treaty which would allow the extradition of dealers operating in compliance with Canadian law only if the offences alleged involved fraud and 'wilful and knowing' violations of American laws.

This agreement, along with the appointment of C.P. McTague to head the Ontario Securities Commission in the autumn of 1945, appeared to signal the start of a thorough-going clean-up of the securities business.[19] McTague later admitted that he had soon discovered he was presiding over a 'jungle' of promoters and dealers in unlisted securities issues operating from Toronto.[20] A new provincial Securities Act, however, gave the OSC a mandate to review the registrations of all brokers and their salesmen when they came up for renewal in 1946 and the power to cancel any licence 'in the public interest'. Moreover, the act was modelled more closely upon American legislation and required dealers to make 'full, true and plain disclosure' of all material facts to their customers.[21]

Firm regulation combined with the threat of extradition was expected to put a stop to the activities of Canadian share-pushers in the US which were attracting such unfavourable notice. Once again, however, the financial community mobilised to resist the new treaty by attacking the extra-territorial application of US rules. Testifying before a parliamentary committee, one mining journalist condemned the attempt to extend American law into Canada as 'the most insolent and impertinent request ever made by one friendly nation of another'. He laid the blame at the feet of the SEC, 'the most execrated and distinctive super-bureaucracy ever created to stifle free enterprise'. The lawyer for the Toronto Stock Exchange complained that the treaty would 'bring about a radical and disastrous change in the entire fiscal policy between Canada and the United States which has prevailed for fifty years'. The Prospectors and Developers Association predicted:

> [I]t will be absolutely physically impossible for any speculative mining venture to qualify with the SEC or any state of the Union. The cost is prohibitive. The difficulties are too great . . . We will have our choice of either cheating on the law and taking the risk of going to jail or doing without American capital in its entirety.

Swayed by these arguments, the committee unanimously recommended against approval of the new protocol. The government dropped the revision of the Extradition Treaty again, despite the pressure from Washington.[22]

The OSC's systematic review of registrations in 1946 only served to emphasise the problems created by Canadians selling unregistered shares in the US. C.P. McTague noted of the long-established firm of H.R. Bain & Co. that:

> The activities of this company outside the province has [*sic*] done more to discredit Ontario than the operation of any other brokers which have come to our notice . . . The attitude of its responsible officers goes to the very root of administrative law. They apparently gave their undertaking to discontinue unlicensed activities as a matter of routine without any serious intention of implementing it.

Bain claimed he had told his salesmen to obey the rules but had been disregarded. McTague rejected that excuse out of hand: 'The proposition that a firm cannot control its salesmen is tantamount to holding that the sale of securities cannot be regulated'. Noting that it was 'a matter of common knowledge that United States interests look with disfavour on the manner in which sales are solicited by Canadian firms', McTague cancelled Bain's brokerage licence.[23]

In a further effort to tighten control McTague decided in 1947 to adopt the principle of self-regulation. The provincial government created the Broker-Dealers' Association of Ontario (BDA), whose board of governors was empowered to discipline all the firms and salesmen dealing in unlisted issues.[24] McTague made it clear to the new BDA governors that he considered controlling sales of unregistered shares in the US one of their most important tasks. To drive the point home he cancelled the registration of a firm called Canadian Securities, which engaged almost exclusively in telephone selling of speculative shares to American buyers. He argued that:

> registration surely cannot be obtained in Ontario practically entirely for the purpose of selling securities in the United States not qualified there, and by methods contrary to the laws of that country and various states . . . We do not deem it in the public interest that we should licence brokers and dealers for the purposes of permitting them to violate the securities laws of another country on a wholesale basis.[25]

The creation of the BDA in 1948 failed to transform a gang of poachers into an association of gamekeepers. O.E. Lennox, who succeeded McTague as head of the OSC in June, soon became disillusioned by the antics of the broker-dealers:

> [A] very large percentage of the Association from its inception thought that the information [sic, formation] of that Association was nothing but an organization to facilitate them in their extravagant methods; . . . they . . . looked to their Board of Governors for protection in accomplishing what they had in mind.[26]

About the only constructive step taken by the BDA was to retain the New York lawyer Hobart L. Brinsmade to see if he could negotiate an agreement with the SEC by which Canadian issuers would be permitted to sell up to $300,000 worth of securities annually under a simplified short-form registration process, already open to US enterprises under the SEC's Regulation A. Brinsmade eventually arranged a meeting between the SEC and the BDA executive in October 1949, but it quickly became clear that the Americans would grant no concessions until a treaty making securities offences extraditable was firmly in place.[27]

Meanwhile, promotional literature continued to flood across the American border from Toronto. The BDA board decided in February, 1949 to impose a 60-day 'armistice' on mailing circulars in order to avoid unfavourable publicity. Several directors quickly tipped off their friends so they could beat that ban, an action which Lennox angrily denounced as 'nothing but a straight double-cross'. In September he formally warned all broker-dealers that he would cancel the registration of anyone found selling exclusively in the United States. Still matters did not improve. By the end of the year Lennox had become thorougly disgusted with the BDA. As soon as the board learned that a member firm had encountered financial difficulties, the news would leak out and some shady operator would appear and offer funds to secure control as a front for his promotions. Deciding to give the directors 'a good dose of medicine', Lennox permitted about 30 of the more reputable firms among the 200 in the BDA to drop their membership during the next couple of years, granting them direct registration through the OSC.[28]

Lennox was particularly offended by the activities of firms like Junior Gold Securities Corporation, whose salesmen had persuaded an Oregon man of doubtful mental competence to risk his entire fortune by pandering to his vision that gold would be discovered on a property which was a silver-lead prospect. Moreover, almost none of the money raised had found its way into the company treasury, 'the most glaring example of a treasury being sabotaged for the vendor's interest which has come to the notice of the Commission in recent years'. Noting that 'the public was misled from every possible angle', he cancelled the brokerage license of Junior Gold Securities in the spring of 1950.[29]

Yet US authorities remained highly dissatisfied. In mid-1949 a Canadian diplomat was summoned to the SEC to hear complaints that nearly ten million items had been mailed into the US from Toronto in recent months, netting up to $10,000,000 from unwary investors. The SEC claimed that since Lennox had replaced McTague at the OSC co-operation between the two agencies had practically ceased. In the autumn, ambassador Hume Wrong reported to Ottawa that newspaper articles critical of Canada's lax regulations were starting to appear. Irritation in Washington at the OSC's continuing failure to crack down more effectively upon the bad actors posed a danger to the 'general spirit' of relations between the two countries. If nothing were done, new American investment in Canada might begin to dry up.[30]

Failing to get a satisfactory response from the OSC, the Americans looked to the government of Canada for action. Late in 1949 the Canadian Post Office was persuaded to suspend the mailing privileges of a dozen of the worst offenders in the BDA. In the House of Commons opposition Conservatives attacked the government for acting at Washington's behest, always a touchy political issue in Canada. If offences had occurred then criminal charges ought to be laid, rather than allowing the Post Office to use 'Star Chamber' methods to interfere with people's livelihoods. Ministers insisted that Canada was not acting on orders from the US, but simply returning material to senders who were attempting to use the mails for fraudulent purposes.[31]

Lennox, however, complained that Ottawa had acted without even consulting him and that the Post Office had selected its targets on the basis of information supplied to the SEC by one faction within the BDA, which had used the occasion to pay off some old scores. As a result some of the worst offenders escaped unscathed. 'I think that mail ban was not worth the paper it was written on', he grumbled, 'because it merely disrupted everything'.[32]

Certainly the stop-orders did not prove effective in stamping out mail-order selling. Many houses simply devised new names or addresses to avoid the Canadian bans as well as the 70 fraud orders and 19 fictitious name orders which were issued by US postal authorities between mid-1949 and mid-1950. In one instance a brokerage firm with a fraud order outstanding against it was permitted to re-register with the BDA under another name. The SEC chairman Harry A. McDonald even published an 'Open Letter to Canadian Securities Dealers' in June 1950 protesting about the continuing abuses. Lennox was so concerned that when rumours of heavy mailings again reached him in December that he formally warned BDA members not to invite American retaliation. A couple of the largest mail houses agreed to hold up their campaigns for 60 days, but other firms continued with business as usual.[33]

Milton Kroll of the SEC staff took the lead in seeking a revised Extradition Treaty, and finally persuaded officials at the State Department to take up the idea again in 1950 though 'they were so busy with the Communists and perverts that it was hard to get anything done'. At first the Canadian government was not enthusiastic; one diplomat noted privately that abandoning dual criminality in the 1942 agreement had been a blunder which had already created more than enough embarrassment:

> The proposition has such far-reaching effects that I am surprised that the original treaty got beyond draft form. It would have the effect of making Canadians completely subservient to American securities regulation, and indeed involves derogation of our sovereignty. I must confess I have considerable sympathy for the various protesting groups.[34]

But Washington was now determined to get Canada to act. In October 1950 the embassy in Ottawa submitted an *aide-mémoire* proposing that a separate convention covering cases of securities fraud be appended to the Extradition Treaty. When the Canadians continued to temporise, the SEC produced a 60-page document detailing the problems created by the lack of coverage in the existing treaty; a now-familiar litany of scoundrels and their swindles was rehearsed once more. Milton Kroll claimed that a recent check of mail at border points indicated as much as $750,000 flowing northwards over a single two-week period, and complained that 6,300 complaints had been received since the beginning of 1949 alone. Investigation by the SEC, he said, had not uncovered a single case in which American investors had received any return on their money.[35]

Canadian officials still resisted. The Deputy Minister of Justice pointed out that the US was not yet ready to accept the principle of dual criminality, but insisted that American laws must apply. External Affairs officials in Ottawa continued to argue that these offences were not of the type to be included in an extradition treaty. The effort to do so was bound to create another wave of domestic opposition. Why not simply tell the SEC to get the OSC to clamp down on the worst offenders?[36]

Owing to the lack of response American irritation at Canada's failure to rein in the share-pushers reached new heights by the start of 1951. In addition to their other wares, Toronto promoters had now spotted the appeal of uranium stocks and the promise of atomic energy. One innocent was persuaded to invest, for instance, by the news that 'Geiger counters were working' on a property. The BDA's New York lawyer reported that Milton Kroll had told him it appeared:

> that Canadians wanted 'to indulge in economic warfare with the United States', and that for his part he was perfect[ly] willing for the United States to wage such warfare, since he was convinced the United States would win that kind of war, as Canadians could not get along without the United States.[37]

At the OSC, Lennox did try his best to deal with the root of the problem. He cancelled the registration of several more brokers for high-pressure mail and telephone selling. And he complained bitterly to the BDA about the markups between the takedown and selling prices on mining shares, which still routinely ran between 200 and 300 per cent. Recent criticism from the US, he wrote,

> has fully demonstrated the serious mistake your Association is making in allowing such generous price spreads . . . Your present policy is part of a vicious circle, as these generous spreads render it possible for broker-dealers to resort to extravagant and unwarranted sales methods, which would be out of the question if their

> profits were kept within reasonable bounds. Surely it is time that your Association realized that something constructive must be done along these and other lines to gain public confidence and to combat adverse publicity.

But the broker-dealers remained unrepentant: after a meeting with Lennox, the BDA board resolved that price spreads were 'not too far out of line under present selling conditions'.[38]

Lennox also tried to reinforce the more responsible elements within the BDA by reversing his previous position and compelling all the broker-dealers to rejoin the association. He also hoped that a requirement that all registrants secure a $10,000 bond from a surety company would weed out some undesirables. Meanwhile, the OSC reinstituted surprise audits, which revealed a number of houses to be seriously undercapitalised. In several cases this had arisen due to heavy debts to printing firms, which were assumed to be controlled by unregistered promoters using these brokerages as fronts.[39]

The SEC's New York regional office, meanwhile, increased the pressure by issuing a ban on brokers executing orders for any Canadian stocks, however reputable, if the companies had any outstanding underwriting or option agreements. Toronto brokers immediately reported a 50 per cent decline in orders from the US. This led the Toronto Stock Exchange and the Investment Dealers Association to propose to the BDA that a joint committee be struck to make recommendations to clean up the securities business in order to pacify the Americans.[40]

Early in March, 1951 ambassador Hume Wrong reported from Washington that the issue was rapidly becoming one of 'general policy which affects the relations between the two countries'. The SEC was threatening to launch a publicity campaign about the 'Canadian problem'. So far the State Department had been able to prevent this by pointing out that negotiations with Canada were under way, but this could not continue much longer. Trying to palm the Americans off by suggesting they talk to the OSC was no solution. Now, Wrong advised, it was 'essential' that Canada respond to the 'strenuous' pressure from Washington and agree to open informal talks.[41]

A couple of days later Wrong's advice was proven correct. The St. Louis *Star-Times* had sent a reporter to Toronto to investigate the brokers who were alleged to be milking Americans of over $50,000,000 annually. On 12 March 1951 the paper began publishing a 14-part exposé that had been submitted in advance to the SEC for vetting. Chairman Harry A. McDonald warned that anyone who bought shares through the 115 boiler-rooms on Bay Street would receive only 'beautifully engraved invitations to the poorhouse'. No less than 45 of the 158 members of the Broker-Dealers Association had already been charged with offences in the US: 21 were subject to mail-fraud orders, 8 were accused of using fictitious names to evade postal bans, and 16 of violations of various state laws. The effectiveness of the self-imposed discipline of the BDA could be gauged by the fact that three current governors belonged to firms under mail fraud orders.[42]

Thoroughly embarrassed, Ottawa hastened to act. Within days of the appearance of the first article, the Under-Secretary of External Affairs, Arnold Heeney, was recommending immediate talks with the Americans. The damaging revelations were getting lots of play in other newspapers, and the NBC radio network had picked up the story, too. 'This appears to be a very "hot" issue', wrote Heeney, 'and I feel that it is imperative that the memorandum should go up to cabinet at once'. By early April approval had been granted for SEC officials to come to Ottawa for informal discussions on revising the Extradition Treaty.[43]

The membership of the Canadian negotiating team indicates how seriously the matter had at long last come to be regarded. Backing up the Associate Under-Secretary for External Affairs were the Deputy Ministers of Justice and Finance, the Deputy Postmaster General and a senior official of the Bank of Canada. External Affairs Minister Lester Pearson approached the Attorney General of Ontario unofficially and persuaded him to send his deputy along with O.E. Lennox of the OSC to the meeting on 1 May 1951. The Canadians caucused privately in the morning. Lennox defended his record as a regulator, claiming that the Americans were exaggerating the extent of the problem. Yet he had to admit that as many as 60 new issues a year had caused complaints, and that the use of fronts made it difficult for him to crack down on several notorious promoters. Moreover, the OSC could hardly cancel the registration of a brokerage merely on the say-so of a foreign agency. He conceded that the legal problems of collecting evidence of wrong-doing in another country were formidable and agreed that a new extradition treaty might be desirable, particularly if Canadian brokers would then be permitted to register issues with the SEC by a simplified short-form prospectus. The province's Deputy Attorney General admitted that it now seemed to be in the national interest to try and work out a new treaty.[44]

Then the SEC representatives arrived, commissioner Richard B. McEntire along with Milton Kroll, shepherded by a senior official from the Ottawa embassy. McEntire contended that the recent adverse publicity in the US had created a serious situation and was actually blocking the flow of capital between the two countries. The Americans admitted that some criticism of Canadian issues might be unjustified, but that it was hard to persuade unhappy speculators that they were not victims of fraud when cases could not be brought before the courts. For that reason alone a new extradition agreement would be helpful.

The Canadians quickly agreed to a new convention on securities fraud provided the principle of dual criminality was preserved. The Criminal Code had been amended in 1948 to make it an offence to obtain money or securities by fraud.[45] Using the mails to defraud was also a crime in Canada; all that had to be done was to amend the law to make it apply to letters posted in either country.[46] With the terms of the convention settled, McEntire and Kroll agreed that once it had been approved the SEC would seriously consider extending short-form registration for small Canadian issues. This had always been rejected in the past, partly because of fears that Latin American countries might demand similar treatment. Though short-form registration was not made a condition of Canada's acceptance of the new convention it was clearly an important quid pro quo. The threat of a crisis in Canadian–American economic relations seemed to have been averted by the negotiations in Ottawa.[47]

Stung by criticism in the US, the government of Ontario also decided to create a select committee of the legislature, chaired by Attorney General Dana Porter, to investigate the securities industry and consider new regulations. O.E. Lennox of the OSC was summoned before the committee in July, 1951; he testified that about 35 members of the BDA (whom he suspected of fronting for half a dozen unregistered promoters) created almost all the problems. Typical of these was A.E. DePalma (described in the press as 'a one-time St. Louis waiter who . . . reigns over his ramshackle empire of moose pasture stock enterprises at 185 Bay St.'). DePalma had jumped $50,000 bail and fled to Canada but had been deprived of his OSC registration in 1946. Unless he admitted to controlling more than 5 per cent of the stock of a public company, acted as an officer or director or sold shares to the public, Lennox pointed out, he could not be compelled to apply for OSC registration. So long as such men worked through fronts and nominees there was very little that the OSC could do about them.[48]

Despite Lennox's objections, the committee solicited the views of the SEC and received an 8,000-word letter from Richard McEntire.[49] He reminded the committee that the illegal activities of Toronto brokers had created 'very real misunderstandings' between the two countries and chronicled some of the more flagrant abuses of recent times, such as the literature advertising a prospect 'adjacent' to a well-known mine that proved to be located over 1,700 miles away. Such antics had led the SEC to conclude that a revised Extradition Treaty was essential:

> No honest person can be harmed by such a revision . . . I know of no American securities regulator who would provide any comfort, active or passive, to a resident of this country who, because he disliked your securities laws proposed to offer securities in Canada without complying with the regulations in each and every province in which his offering was effected.

Canadian critics of the SEC, noted McEntire, made much of the cost and complexity of complying with its regulations, but during the past 15 years $59,000,000,000 worth of issues had been registered, of which $1,100,000,000 were Canadian. There was also much talk about the impossibility of complying with 47 different state laws (Nevada alone having no regulations), but most stocks were only sold in a handful of states and American distributors seemed to have no difficulty in mastering the rules. 'Blame-placing or recrimination' would serve no purpose, but an up-to-date Extradition Treaty would end the abuses and might permit Canadian brokers to apply for short-form registration for small issues.

Asked for his comments on McEntire's letter, the crusty Lennox did his best to be tactful but could not conceal his irritation at the American regulators: 'the people I deal with in the SEC are a fine bunch of men, the very best . . . But I think the whole gist of the thing is they do not want Ontario securities sold in the United States'. Why was this so? 'I am afraid that is beyond me. I do not know what the reason is. It is a thing which goes back over many years. It is a situation I found on my doorstep; it is nothing new'. But when asked directly if telephone selling was behind this attitude, he growled 'Oh, undoubtedly'. A small group of Bay Street brokers had given the entire Canadian financial community a bad name. He was doing his best to get rid of them: 'I have knocked them down one after the other . . . The trouble is that when you knock one down another crops up'.[50]

Lennox could barely conceal his irritation when asked about the Canadian horror stories which people in the United States were always reciting. The St. Louis Better Business Bureau might claim that Americans were being swindled out of more than $50,000,000 annually for Canadian stocks, but he insisted that no more than $9,000,000 was involved. Lennox argued that many of the scams described dated to the mid-1940s. Over a three-year period the SEC had forwarded him only about half a dozen sworn complaints about telephone selling. In Ottawa the Americans had produced a lengthy affidavit detailing offences by Canadians to demonstrate the need for a revised Extradition Treaty but nearly five months later this had not yet been forwarded to Toronto. In another case where the OSC considered that an extraditable offence had been committed the SEC had failed to act.[51]

Committee members pressed Lennox for further information on the OSC's handling of specific cases raised by McEntire. He resisted, arguing that demonstrating that the SEC was responsible for many of the problems would only harm relations between the two agencies. Eventually he agreed to discuss half a dozen complaints, all of them minor in nature and none of them leading to serious disciplinary action by the OSC. As a result of all the fuss made by the Americans, Lennox complained, 'I have been put on the defence [*sic*] about things [regarding] which there are no positive charges against us'.[52]

C.P. McTague, appearing as counsel for the BDA, echoed these criticisms. During his three years at the head of the OSC, he told the committee, he had frequently invited the Americans to produce documented charges but they had failed to do so. He had held meetings with successive chairmen of the SEC but had found them to be concerned exclusively with the issue of extradition. The difference in the regulatory environment between the two countries was made quite plain by McTague, who observed that extradition had never seemed to him the right way to deal with these problems, as 'it was a horrible kind of business putting people, who could hardly be said to be in the field of crime by the longest stretch of the imagination, into-difficulty'.[53]

McTague argued that Richard McEntire's claim that the SEC was interested solely in compelling full disclosure and that any delays in granting registration arose simply from the unwillingness of applicants to comply should be taken '*cum grano salis*'. In fact, the SEC routinely sought to go behind every statement in a Canadian prospectus, because they had long ago decided not to register any unproven mining ventures except in very exceptional circumstances. As a result applicants normally encountered delays of at least 60 days. The Americans were convinced that no administrative agreement with the OSC would end the abuses and that only a revised treaty would solve the problems. Like Lennox, McTague demanded that the SEC cease making general criticisms and supply definite evidence about offences. He pooh-poohed claims emanating from Washington that Americans had lost confidence in all Canadian securities, pointing out that certain stocks were still selling well in US markets.[54]

Having heard from the regulators, the committee decided to seek the views of the promoters themselves. Lou Cadesky gave an appropriately colourful performance. What would happen, he was asked, if the US banned the sale of speculative Canadian stocks? 'The mining industry would be shot', because Americans were much more willing than

Canadians to take a chance. 'All in all, I think the public is getting a fair run for its money. They cannot all win'. He admitted he sent out huge mailings because only 1 in 100 responded. As to the complaints, the OSC was only compounding the problems faced by Canadian promoters by recording disciplinary actions in its *Bulletin*: 'Why put wood on the fire? That is where they get their propaganda'?[55]

After taking 3,945 pages of testimony and collecting hundreds of exhibits, Ontario's legislative committee was suddenly snuffed out in October 1951 by the calling of a provincial election which dissolved the assembly. When the legislature reconvened in the spring of 1952 Attorney General Porter stoutly defended the OSC.[56]

With the new extradition convention settled, the SEC was keen to see it come into force as quickly as possible, but the Canadian government was determined to move cautiously to avoid a repetition of the wave of criticism which had been unleashed in 1945. Even though the principle of dual criminality had been adhered to, federal officials decided that the proposed convention ought to be circulated privately to the brokerage community. In forwarding the text to the BDA Arnold Heeney noted, 'the fact is that the concession to the United States is at a minimum, and I think their chief worry is that it should appear to the United States public and Senators that the proposed arrangement does not go far enough.' Evidently this veiled warning struck home, for McTague made no protest against the the proposed agreement. Nor did the stock exchanges or the Investment Dealers Association. The convention was formally signed in October 1951.[57]

When the convention finally came before a parliamentary committee in the spring of 1952, there was no repeat of the previous controversy. A British Columbia member of parliament summed up the general feeling: approval was essential because criticism in the US was hampering Canadian development. 'Everybody knows that Bay Street is infested with illicit operators'.[58] When the House of Commons took up the convention in late May, the Opposition pointed out that the Deputy Minister of Justice, F.P. Varcoe, had told the parliamentary committee that representations made by telephone or telegraph would not be covered. The SEC and the American press pounced upon this, complaining that shady Canadian promoters could continue to have a field-day without fear of extradition. Varcoe insisted, however, that this was all a tempest in a teapot; he had been referring not to the convention as a whole but only to the narrower provisions on mail fraud. Washington ought to be told that, 'if a specific case should arise involving the use of the telephone or telegraph and the United States authorities should conclude upon the evidence that an offence has been committed in the

United States, they should not be apprehensive that a Canadian judge would take a different view'.[59]

The new extradition convention came into force early in July 1952. In the boiler-rooms along Bay Street, action was reported to be slow as the share-pushers waited to see what would happen. By September the draft of the SEC's new Regulation D had been pretty well hammered out. Properly registered broker-dealers would be permitted to sell up to $300,000 worth of each issue annually. The main concern of Toronto promoters now lay in discovering which of them had already been named in secret indictments and getting those dissolved before they ventured to apply.[60]

C.P. McTague made enquiries through diplomatic channels on behalf of the BDA and reported that Ottawa believed 'there is no disposition on the part of the United States on the part of United States authorities to dredge up old cases'. Though he admitted that this was the 'language of diplomacy' rather than a clear amnesty, he concluded, 'I think we just have to take our chances on relying on what is contained in the language, cautious as it is'. Yet many of McTague's clients remained extremely nervous when they discovered late in 1952, that registration might still lay them open to 'a host of stale lawsuits', including prosecution for some offences for which the statute of limitations had expired.[61]

The SEC formally promulgated Regulation D in March 1953. McTague again complained that retroactive prosecution of brokers would violate assurances given by the government of Canada when the extradition protocol was being negotiated. Justice Minister Stuart Garson was not sympathetic:

> Having regard to the public relations problems involved as between the two nations, it would seem that the general interest of Canada would not be served by changes which would jeopardize the goodwill of the United States investors and financial institutions in order to protect those who in the past have been guilty of fraudulent operations in this country.

McTague tried to argue that:

> The SEC are very fond of labelling people as being guilty of fraudulent operations when they have not been before any court . . . The label 'guilty of fraudulent operations' is the typical propaganda weapon of the bureaucrat.

But he got nowhere. When Regulation D came into force Lennox immediately issued an OSC directive requiring all registrants to obey it on pain of losing their licences.[62]

The SEC did eventually agree not to prosecute Canadian brokers except in cases where it possessed clear evidence of fraud. Still, by January 1954 only five houses were reported to be selling under Regulation D, while the market for Canadian mining shares in the US had collapsed. Attempts to persuade the SEC to drop outstanding indictments altogether failed due to fear of Congressional criticism. The Americans finally conceded that applicants would be accepted after 1 June 1954 if they had no record of violations of securities regulations over the past year or so.[63]

By that time, however, other serious flaws in Regulation D had become apparent. The new rules opened the short form of registration not only to Canadian securities but to US issuers 'having their principal business operations in Canada'. American promoters quickly realised that they could incorporate companies in the US to acquire worthless Canadian uranium claims and sell shares with little scrutiny from the SEC. One Delaware company was able to market 2,450,000 shares acquired for just four cents apiece. Stock purchasers paid little attention to the information that was disclosed, and few of the proceeds ever reached the treasuries of these companies, with the result that in many cases 'the shareholders' interest has almost reached the vanishing point'. Yet Canadians were blamed for these scams.[64]

Toronto promoters, meanwhile, experienced lengthy delays in dealing with the SEC. In addition, it was becoming clear that regulators in many US states were unwilling to accept the SEC's vetting of Canadian issues and insisted on repeating the process before approving their sale. By the autumn of 1954 Canadians had almost ceased to make use of Regulation D, leaving the field to a few American shysters.

At the same time, a regulatory crackdown by Lennox designed to impress the Americans had driven many fly-by-night operators out of Ontario. Taking advantage of the fact that the Quebec Securities Commission was a much weaker agency, they settled in Montreal, where a half-dozen boiler-rooms were operating by the fall of 1954, calling across North America. As a result more complaints about the 'Canadian problem' were heard in the United States. For once, members of the BDA were not at fault, nor could the OSC be blamed for what was occurring. Eventually Lennox decided that he would simply allow the situation to revert to the status quo ante Regulation D. In November 1954 he withdrew the requirement that Ontario brokers adhere to SEC rules. He reiterated the OSC's opposition to mass mailings and high-pressure telephone selling, but announced that each registrant should make the decision whether or not to sell in American markets.[65]

At the same time the new Extradition Treaty received its first test. A couple of Montreal boiler-room operators, Wallace Link and Harry Green, were charged with fraudulent selling in Michigan and the SEC applied for their delivery. The Quebec Superior Court rejected the application. While admitting that there was abundant evidence that Link and Green's operation was 'nefarious', clearly 'a share-pushing scheme', the judge noted that the indictments covered fraudulent use of both the telephone and the mails. The latter was an offence in Canada, but the former was not covered under the 1951 protocol so that the principle of dual criminality did not apply. The extradition request was therefore refused, and when the matter was appealed to the Supreme Court of Canada it declined to interfere.[66]

American officials were infuriated at the failure of the long-sought Extradition Treaty to operate effectively. They recalled the assurances of Canada's Deputy Minister of Justice in 1952, that if they concluded that there was illegal telephone selling in the the US there need be no fear that the Canadian courts would take a different view. The embassy in Washington reported that the SEC felt that 'if extradition could not be obtained in this case it never would be in any future case'. Criticisms of Canadian stock frauds redoubled. 'In some ways this is the single softest spot in Canadian–United States relations as far as people on this side of the border are concerned'. One diplomat was summoned to the SEC where the Chairman read him a lengthy 'Statement of Securities and Exchange Commission Regarding Illegal Sales of Canadian Securities'. This document reviewed in detail the unhappy history of this issue, noting that since 1950 the SEC had received no less than 12,627 complaints about Canadians. During 1955 alone information had been collected on 26 illegal offerings involving 16 different Canadian brokers. Was Canada now prepared to pass legislation making frauds on persons in other countries illegal and to ensure that the Extradition Treaty operated as originally envisaged? 'At the conclusion of the seance' the diplomat could only promise to report these complaints to Ottawa.[67]

In the autumn of 1955, US Attorney General Herbert Brownell buttonholed Justice Minister Stuart Garson at a dinner in Toronto, and demanded that Canada undertake a reference to its Supreme Court to overturn the decision in the Link and Green case and make the treaty effective. The cabinet temporised, because it did not wish to antagonise the government of Quebec by seeming to interfere in the administration of justice in that province.[68] In 1956 the Canadian ambassador in Washington continued to press for action to avoid friction with the Americans, but other diplomats believed that reopening the Extradition Treaty would only make trouble. The State Department was merely asked for further proposals to deal with the problem of securities fraud in general. Thereafter discussions about revising the Extradition Treaty simply petered out.[69]

The boiler-room operators forced to leave Toronto by the OSC slowly drifted back within a year or so. In the spring of 1956 the Attorney General of New York State complained to O.E. Lennox that he had personally been telephoned by a BDA firm and subjected to a classic high-pressure pitch for a uranium stock; the salesman had promised that the shares would double or treble in value during the next two or three months. Understandably enough Lennox was 'very irritated' and demanded that the BDA discipline the offender. Life was back to normal for Toronto's stockateers.[70]

The efforts to control illegal sales of speculative Canadian stocks in the US during the decade after World War II largely failed. Not even the threat of extradition and the willingness of the SEC to offer special treatment for Canadian issues solved the problem. Despite the risk of arousing antagonism in the US and impeding access to capital markets there, Toronto promoters continued to do business as usual, telephoning and mailing to their American customers.

US officials found it hard to understand why the OSC did not crack down harder on these activities. Yet many Canadians, including an influential segment of the financial community, simply refused to accept that there was serious wrongdoing. The staid bond dealer or investment banker on Bay Street might look a bit askance at the fast-talking share-pusher, but all agreed that it was laudable to put down a little money on developing Canada's natural resources. Certainly it was more patriotic than betting on a horse race. Perhaps some mining promotions were a bit shady; still, not everything at the racetrack was on the up-and-up either. Taking a flyer on penny stocks was almost a national duty for Canadians who could afford it.

Toronto promoters quickly discovered that American speculators were quite ready to gamble on Canadian mining and oilstocks. W.R. Wismer, longtime executive secretary of the Broker-Dealers' Association, once remarked, 'I'm the first to admit that Americans are greater gamblers and speculators than Canadians. Isn't it better to channel these funds into speculative enterprise for the development of Canada than into horseracing, for example?' Once the long distance telephone helped to create an integrated capital market in the two countries, controlling trans-border security sales became more difficult. The SEC's Richard McEntire noted, 'there appears to be no limitation to the ingenuity employed by some of these telephone salesmen. And indeed the gullibility displayed by many of our investors is equally unlimited'.[71]

Millions of United States dollars were invested in low-priced Canadian mining and petroleum shares during the decade after World War II. Unfortunately it is impossible to estimate how much of that money actually went to finance exploration and development, especially funds raised by the sale of over-the-counter stocks. Clearly a substantial sum went simply to enrich a small group of promoters, though some money was used to grubstake prospectors. Many of the public companies incorporated were mere corporate shells which functioned only briefly or not at all. How great the impact of this flow of investment was for Canadian natural resources production cannot be determined.

When American critics denounced Canadian authorities for not putting the promoters out of business altogether, O.E. Lennox of the Ontario Securities Commission became irate. How, he asked, was he supposed to shield people from the consequences of their own stupidity? 'It appears futile . . . to protect the interests of those who will speculate blindly every time the telephone rings'.[72] Americans had to recognise that there were differing regulatory regimes in the two countries, and both Canadian promoters and American buyers were ready to take advantage of that. The SEC wanted Canadians to play by their rules when operating in the US, but the promoters refused. Despite the diplomatic friction it created they saw nothing wrong with ignoring American regulations whenever it suited them.

NOTES

An earlier version of this paper was presented to the Business History Conference, Toronto, March 1991, where Professor Geoffrey Jones provided valuable comments.

1. The rise of offshore markets like the Euromarkets which came to be centred in London during the 1960s is a case in point. See, for example, Ron Chernow, *The House of Morgan, An American Banking Dynasty and the Rise of Modern Finance* (New York, 1990), pp. 541–50.
2. This was one of series of exemptions which Canada has secured from US economic regulations since World War II. See R.D. Cuff and J.L. Granatstein, *Canadian–American Relations in Wartime, From the Great War to the Cold War* (Toronto, 1975), 'Canada and the Perils of "Exemptionalism"', pp. 151–63.
3. Instead of executing buy orders for clients purchasing shares on margin, bucket shop operators would issue fictitious confirmations for trades and place the order in the 'bucket', anticipating that if delivery of the shares were demanded they could buy into the market at lower prices. Meanwhile the brokerage could charge clients interest on loans for margin purchases without having to increase its own liability for call money borrowings to finance the share purchases. In effect, the brokers bet against the client that the price of the stock would fall not rise
4. See *Report of the Inter-Provincial Conference, February 10th to 14th, 1930* (Toronto, 1930) and J. Peter Williamson, *Securities Regulation in Canada* (Toronto, 1960), pp. 21–7.
5. [Toronto] *Financial Post*, 21 Nov. 1934; 18 Jan. 1936. A boiler-room contained banks of telephones on which salesmen made high-pressure pitches. The Ontario Securities

Act was amended in 1937 to prohibit telephoning anyone not already a friend or customer at a private residence for the purpose of selling shares, but the OSC believed that it had no constitutional authority to enforce this outside the boundaries of the province, a positive incentive to make calls to other jurisdictions in the US and Canada.

6. The state laws got their name because fast-talking salesmen were said to offer even shares in the blue sky above. An entertaining account of this period is John Brooks, *Once in Golconda: A True Drama of Wall Street, 1920–1938* (New York,1969); see also Joel Seligman, *The Transformation of Wall Street: A History of the Securities and Exchange Commission and Modern Corporate Finance* (Boston, 1977).
7. *Financial Post*, 7 July 1934; 17 Aug. 1935.
8. F.H. Leacey (ed.), *Historical Statistics of Canada* (Ottawa, 2nd ed. 1983), Series G203–26. US-owned investment in petroleum and gas rose by $1,564,000,000 from $152,000,000 in 1945 to $1,716,000,000 in 1955, in mining by $724,000,000 from $277,000,000 to $1,001,000,000, or $2,288,000,000 altogether.
9. Balmer Neilly of McIntyre-Porcupine Mines quoted in *Financial Post*, 18 March 1939.
10. Trading in these shares was conducted mainly by telephone amongst the various brokerages, delivery of certificates being 'over-the-counter.'
11. National Archives of Canada, External Affairs Department Records (hereafter NAC, EA), file 10895–40, pt. 3, K.J. Burbridge to Detroit consulate, 2 Jan. 1952.
12. Short sellers borrow stock to sell in anticipation of falling prices which will permit them to buy back shares at lower prices to repay their loans and still take a profit.
13. The OSC had established these escrow rules during the 1930s to prevent vendors and promoters from selling their own shares to the public in competition with the treasury stock.
14. Ontario Archives, Legislative Assembly of Ontario, Select Committee on the Administration of Justice, 1951, Proceedings (hereafter OA, Justice Committee), Vol. 23, 29 Aug. 1951, 3274. W.R. Wismer, who joined the OSC staff in 1945, recalled that one person organised 5 successive promotions like this without even making any effort to explore the properties involved before his brokerage licence was cancelled. See also Marcus Verner as told to Earl Beattie, 'I Sell Phony Stock to American Chumps', *Saturday Evening Post*, 12 Jan. 1952. For talking to this journalist salesman Stafford E. Harriman was sworn at by an influential figure in the brokerage industry, threatened with the loss of his licence, and told 'I'll see you never work on the street again'. Broker-Dealers Association of Ontario, Minute Book [hereafter BDA, MB], 23 Jan. 1952 (in the author's possession).
15. *Financial Post*, 23 Dec 1944; *New York Times*, 18 May 1945.
16. The treaty did cover the offence of 'obtaining by false pretences', but US courts had interpreted this so narrowly that it was difficult to secure convictions in many states. The SEC's jurisdiction rested upon use of the mails and interstate commerce for the marketing of securities, not covered in the treaty.
17. NAC, EA, file 12216–6–40, pt. 1, John Read to O.D. Skelton, 29 April 1942; Read to Deputy Minister of Justice, 30 Jun. 1942.
18. Canada, House of Commons, *Debates* (hereafter Can., H. of C., *Deb.*), 29 Jan. 1943, p. 8.
19. McTague had been a judge of the Ontario Supreme Court and was appointed to chair the National War Labour Board in 1943.
20. OA, Justice Committee, Vol. 18, 24 Aug. 1951, pp. 2919–20.
21 *Statutes of Ontario*, 1945, c. 22
22. Can., H. of C., Standing Committee on External Affairs and National Defence, 1945, *Minutes of Proceedings and Evidence*, No. 7, Sidney Norman, 187; No. 5, Arthur Slaght, 95; Joseph Sedgwick, 145; ibid., *Deb.*, 17 Dec. 1945, pp. 3711–2.
23. Ontario Securities Commission (hereafter OSC), 'Reviews of Registration of Brokers and Salesmen', 1946–48 (typescript, University of Toronto Library), *Re H R. Bain & Co.*, 27 Jan. 1946.
24. *Statutes of Ontario*, 1947, c.8; similar disciplinary powers were granted to the Toronto

Stock Exchange and the Investment Dealers Association which was composed of underwriters.

25. OSC, 'Reviews of Registrations', *Re Canadian Securities*, 2 March 1948. In another case McTague reiterated that 'Ontario registration . . . must not be used purely as a subterfuge for the purpose of violating the securities laws of another country with impunity'. Ibid., *Re G.F. Cockburn & Co*, 2 March 1948
26. OA, Justice Committee, Vol. 14, 25 July 1951, pp. 2059–60.
27. BDA, MB, 11 May, 6 July, 21 Oct. 1949; OA, Justice Committee, Vol 23, 29 Aug 1951, pp. 3314–5, 3335–51. Lennox of the OSC was also present but recollected that he had responded only when spoken to, owing to the ill-feeling which existed towards him in the BDA: 'if anything had happened to upset the success of the meeting it would have been all the worse, so I did not make myself vulnerable'. Ibid., Vol. 16, 27 July 1951, p 2298.
28. Ibid., Vol. 14, 25 July 1951, pp. 2060–8.
29. OSC, *Bulletin* (hereafter OSCB) Feb., April (quoted) 1951, *Re Junior Gold Securities Corporation*. Lennox founded the monthly *Bulletin* in 1949 to publicise OSC decisions more fully.
30. NAC, EA, file 10895–40, pt 1, W D Matthews to Under-Secretary of State for External Affairs (hereafter U/SS EA), 11 July 1949; Hume Wrong to Arnold Heeney, 18 Oct. 1949, Confidential.
31. Can., H. of C., *Deb.*, 29 March 1950, 1350–1; ibid., 9 May 1951, p. 2338.
32. OA, Justice Committee, Vol. 18, 22 Aug. 1951, 2708, pp. 2717–8
33. A. Garfield Heyes Ltd used six different addresses between August 1950 and April 1951 to evade fraud orders, while a firm employing a BDA governor used at least seven different names at its one address OA, Justice Committee, Vol. 15, 26 July 1951, pp. 2162–3; ibid., Exhibit 127, Richard McEntire to Dana Porter, 17 Aug 1951; BDA, MB, 2 May 1951 Lennox later admitted that he had not published the December 1950 warning in *OSBC* to avoid alerting the SEC See OA, Justice Committee, Vol. 14, 25 July 1951, pp. 2111–2.
34. OA, Justice Committee, Vol. 14, 29 Aug 1951, p. 3353; NAC, EA, file 12216–6–40, pt. 4, Memorandum from F.B Roger to K.J Burbridge, 29 Sept. 1950, Secret
35. NAC, EA, file 10895–40, pt. 1, U/SS EA to Washington embassy, 16 Oct. 1950 and reply, 9 Nov 1950 enclosing the SEC's 'Deficiences in Extradition Arrangements between Canada and the United States for Securities Frauds', 1950, Confidential
36. NAC, EA, file 10895–40, pt. 2, Memorandum from K.J. Burbridge re Securities Frauds Offences, 29 Dec. 1950.
37. OA, Justice Committee, Exhibit 127, McEntire to Porter, 21 Aug 1951, BDA, MB, 18 April 1951.
38. OSCB, Feb., 1951, *Re Norwitt Corporation* and *Re Regional Securities Ltd*; BDA, MB, 4 April 1951 containing Lennox to W.R. Wismer, 2 April 1951, Confidential, ibid., 18 April 1951 (quoted)
39. Ibid., 21 Feb., 2 May 1951
40. *Financial Post*, 31 March 1951.
41. NAC, EA, file 10895–40, pt 2, Washington embassy to U/SS EA, 10 March 1951
42. Ibid., Washington embassy to U/SS EA, 13 March 1951 enclosing proofs of the articles
43 Ibid, U/SS EA to Washington embassy, 16 March 1951, Heeney to Deputy Minister of Justice W R Jackett, 20 March 1951 (quoted), ibid, file 12216–6–40, pt 4, Memorandum from L B Pearson to cabinet, 20 March 1951, Confidential
44 Ibid, file 10895–40, pt. 2, Minutes of the Informal Discussion between Canadian and Ontario Officials, 1 May 1951
45. Section 444 of the Criminal Code repealed the requirement that a person *conspire* to defraud after an OSC investigation showed that L R. Brooks had acted alone in manipulating the price of Eldona Gold Mines shares Convictions under this section

were much easier to obtain than under section 404 which did not cover falsehoods about future facts, such as the promise that share prices were certain to rise as soon as a stock exchange listing was obtained.

46. Section 209(c) of the Criminal Code was changed in the summer of 1951 so that Toronto brokers could not escape charges by posting their letters from New York state
47. NAC, EA, file 10895–40, pt. 2, Minutes of an Informal Meeting of Officials of the United States, Canadian and Ontario Government, 1 May 1952, Continuation of meeting, 2 May 1951 (2 parts); Washington embassy to S/S EA, 28 Aug 1951; ibid., pt. 3, Memorandum from E.R to Pearson, [5] May 1952.
48. OA, Justice Committee, Vol 17, 21 Aug. 1951, pp 2458–71, Vol.18, 22 Aug. 1951, pp. 2685–8, 2738.
49. Ibid., Exhibit 127, McEntire to Dana Porter, 17 Aug 1951
50. Ibid., Vol 15, 25 July 1951, p. 2216 (quoted), pp. 2143–53; Vol.16, 27 July, p. 2332.
51. Ibid , Vol. 15, 26 July 1951, pp 2274–6; Vol. 17, 21 Aug. 1951, pp. 2443–50. The entire SEC had to approve the release of formal complaints to other bodies which created delays.
52. Ibid , Vol. 17, 21 Aug. 1951, pp 2544–55.
53. Ibid , Vol. 20, 24 Aug. 1951, pp 2925–8.
54. Ibid., Vol. 22, 28 Aug 1951, pp. 3092–3104.
55. Ibid., Vol. 27, 3 Oct. 1951, pp. 3795–3895.
56. Ibid , Box 1, W.M. Vickers to Alex C. Lewis, 28 Nov. 1951, *Financial Post*, 8 March 1952.
57. NAC, EA, file 12216–6–40, pt. 4, K.J Burbridge to Deputy Minister of Justice, 22 Aug. 1951, Heeney to McTague, 25 Sept.1951, Memo from Heeney to L.B Pearson, 18 Oct. 1951, PC 5736, 25 Oct 1951.
58. Can., H of C., Standing Committee on External Affairs, *No. 10*, 13 May 1952; see remarks of G.M. Murray (Cariboo) at 274
59. NAC, EA, file 10895–40, pt. 3, Washington embassy to S/S EA, 23 May 1951 and reply, 26 May 1951 (quoted)
60. Registrants were required to denominate legal agents in the US, which of course laid them open to immediate service of subpoenas and indictments
61. Ibid , file 10895–40, pt. 3, Escott Reid to McTague, 5 Aug.1952, BDA, MB, 13 Aug., 10 Dec. 1952.
62. BDA, MB, 4 March 1953 including McTague to Garson, 2 March; 6 May 1953 including Garson to McTague, 23 April and McTague to Garson, 29 April, *OSCB*, Nov 1954, 'Statement of Policy' by Lennox.
63. *Financial Post*, 30 Jan. 1954, BDA, MB, 2 Feb. 1954
64. OSCB, Nov. 1954, 'Statement'; *Financial Post*, 2 July 1955.
65. *OSCB*, Nov. 1954, 'Statement', *Financial Post*, 19 June, 2 Oct. 1954.
66. *USA v Link and Green*, (1955) 3 *DLR* 386; (1955) *SCR* 183; Link and Green were ultimately convicted of violations of Canadian law though their penalties were less severe than those possible under US law
67. NAC, EA, file 10895–40, pt. 4, Washington embassy to U/SS EA,13 May 1955; ibid , file 12216–6–40, pt. 5, R A. Farquharson to Archibald Day, 6 May 1955; Memorandum from E A Ritchie to M.H Wershof, 29 Aug 1955, Confidential enclosing SEC statement.
68. Ibid., Arnold Heeney to L B. Pearson, 18 Nov 1955, Personal and Confidential, Memorandum from Heeney on Security Frauds· *Link and Green Case*, 8 Nov 1955, Confidential The administration of justice in Quebec had already been raised in the controversial *Coffin* case and Ottawa wished to avoid antagonising Premier Maurice Duplessis further.
69. Ibid , 12216–6–40, pt. 6, Arnold Heeney to L B. Pearson, 7 Feb 1956, Personal and Confidential; Canadian Embassy, Washington to Under-Secretary of State for External Affairs, 9 Apr. 1956, Memorandum from M.H Wershof to acting Under-Secretary, 4 Sept 1956; Memorandum from H C. Kingstone re the Extradition Convention with the US, 23 Oct. 1957, Confidential.

70. *Financial Post*, 9 July 1955; BDA, MB, 8 May 1956.
71. Wismer was quoted in the St. Louis *Star-Times*, 22 March 1955; OA, Justice Committee, Exhibit 127, McEntire to Dana Porter, 21 Aug. 1951.
72. *OSCB*, June 1956, *re Louis Wayne* . . .

The Role of Canadian Chartered Banks in US Banking Crises: 1870–1914

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For well over a hundred years Canadian chartered banks have been active in American financial markets. The five largest Canadian chartered banks have been very prominent among foreign banks operating in the United States.[1] Of course, part of the reason for this is the proximity of Canada to the United States and the importance of Canada as a trading partner with the US. However, in the late nineteenth and early twentieth centuries the Canadian branch banking system (especially the larger chartered banks) was much more stable than the US limited branch banking system.[2] It is often speculated, therefore, that this relative stability of the Canadian banking system is in part responsible for the prominent position Canadian banks now hold in US financial markets.

This paper examines the role played by Canadian chartered banks in the banking crises that occurred in the US over the period from 1870 to 1914. The particular hypothesis investigated is whether Canadian chartered banks, operating through their US branch offices, increased their share of total US deposits during these crisis periods. Such an occurrence would imply that US depositors perceived the Canadian chartered banks as being safer than American banks during periods of financial distress.[3] This perception would have enhanced the reputation of Canadian chartered banks and facilitated their expansion into the US market.

The period 1870–1914 is chosen to consider this hypothesis for several reasons. First, in 1870 the Canadian government enacted the Bank Act, the first piece of formal legislation governing chartered banks in Canada. This Act required that all chartered banks keep records of their domestic and foreign operations and submit monthly reports to the Minister of Finance. These reports are published in the *Canada Gazette* and provide data on the foreign operations of Canadian banks. Second, during this period prior to the establishment of the Federal Reserve system in 1914, there were many instances of financial distress in the US banking system. The most severe cases of financial strain, which will be referred to as 'major crises' since they involved a significant number of bank suspensions and failures, are well documented. While most of these crises began in New York, their effects were felt in other US financial centres, including Chicago, the largest centre after New York. These episodes of financial distress are the experiments needed to test the hypothesis. Third, several Canadian banks were operating in the United States, primarily in New York and Chicago, over this period. Hence it may be possible to infer whether the Canadian banks enhanced their reputation and also their position in US financial markets as a result of their roles in these crises.

In order to test the hypothesis that Canadian banks increased their share of US deposits during US banking crises, a simple theoretical model of the deposit decisions by US residents is developed. The model explicitly incorporates the probability of a bank failure and a default by the bank on its liabilities to depositors. From the theoretical model a single-equation empirical model is derived. This equation is estimated, thereby permitting a direct test of the hypothesis.

I

Historical Background

In US economic history, the years 1870–1914 were characterised by a high degree of instability in financial markets. Periods of financial distress of varying levels of severity and duration occurred frequently. Thorough studies of these events were carried out under the auspices of the National Monetary Commission (NMC), a US Congressional Commission set up to analyse the financial system's weaknesses in order to recommend effective reforms.

The two most comprehensive NMC studies of these financial crises were conducted by O.M. Sprague and E.W. Kemmerer.[4] In his study Sprague examines in detail the circumstances surrounding the five most serious or 'major' crises that occurred in 1873, 1884, 1890, 1893 and 1907. For Sprague, the occurrence of a 'major' crisis almost always involved a suspension of payments on deposits by banks – the only exception being the crisis of 1890. Kemmerer investigates the seasonal fluctuations in money and credit demand that seem to have been the underlying causes of many of the financial crises that took place during this period. His statistical analysis covers the years 1890 to 1908. While Kemmerer, like Sprague, classifies the crises of 1890, 1893 and 1907 as 'major' crises (he actually calls them major panics) he also includes crises that occurred in 1899, 1901 and 1903 under this heading. In addition, he considers less serious and more local episodes of financial strain, which he calls 'minor panics' (see Table 1); Kemmerer's classification system is based on reports in the financial press of the day, namely the *Commercial and Financial Chronicle*. These crises, in the categories defined by Sprague and Kemmerer, are employed to test the hypothesis considered in this paper.

The performance of the US banking system during the postbellum period prior to the founding of the Federal Reserve system in 1914 has been the subject of intense analysis by economic historians.[5] Out of this large volume of literature it is worth noting several key elements that characterised the US banking system and were each partly responsible for the relative instability of the system and its tendency to lapse into frequent financial crises during this period.

The first important element of the US banking system was the federal and state banking legislation; it had the effect of creating a banking system that was atomistic, decentralised and weakly regulated. From 1864 to 1914 the US banking system consisted primarily of unit banks that were established and operated under either federal or state jurisdiction. National banks were governed by the National Banking Act of 1864, which prescribed, for example, minimum capital requirements and rules for note issue. In addition, this act was subsequently interpreted as prohibiting branch banking.[6] Individual states passed banking statutes that controlled banks founded with state charters. While state banking regulations typically addressed many of the same issues regarding the establishment and operation of state banks, there was a wide variation in the actual regulations.[7] For example, only 11 states, including New York and California, permitted branch banking under certain conditions, eight states explicitly prohibited it, and the remaining states, such as Illinois, did not address the issue in their banking regulations.[8] In this latter case, branch banking was widely held to be unlawful.[9] Barnett concluded his study of branch banking by stating that 'under none of the state banking laws has there been built up an important system of branch banks'.[10] One of the primary effects of the restrictions on branch banking at the federal and state levels was to limit the size of banks.[11]

In addition, despite the proliferation of banking legislation at the federal and state levels, regulation of the US banking system during this period was not very effective in promoting stability. The chief reason for this was the rivalry between federal and state regulators to control the banking system. The result was that entry into the industry, especially at the state level, became virtually unrestricted.[12]

The second prominent characteristic of the US banking system was its inability to accommodate the seasonality of currency and credit demand. This seasonality was primarily due to the requirements of the agricultural sector; during the spring planting and autumn harvesting seasons, more currency was needed to facilitate a larger number of transactions, and more credit was required by farmers to finance planting and harvesting. The financial sector also had greater currency and credit needs at these times in order to make quarterly interest and dividend payments. These seasonal demands tended to draw down deposits at a time when banks were being approached for additional loans, a situation which was termed a 'perverse elasticity of the money supply', in that the money supply was being reduced exactly at a time when more was needed.[13] Since the US banking system lacked a central bank there was no effective mechanism to accommodate these demands. Moreover the US Treasury, which managed the borrowing needs of the government, was unable to conduct effective open market operations that would have put more reserves into the system when they were needed. The principal reason for this was that funds were not made available to the Treasury to purchase US government bonds during periods of high currency and credit demand.[14]

Finally, because of the restrictions on branch banking, a system of interbank deposits developed among US banks in which smaller country banks maintained deposits, also called bankers' balances, with larger city banks to facilitate the clearing of balances and the transfer of funds via loans and discounted notes.[15] This system of interbank deposits, known as the correspondent banking system, was given legal support for national banks by the National Bank Act of 1864 which established a three-tiered network of bank deposits and reserves. The three tiers consisted of national banks in New York, the central reserve city, national banks in 18 reserve cities, and the remaining national banks known as country banks.[16] The Act allowed national banks in the lower tiers to count deposits with national banks in the upper tiers as part of their required reserves. This correspondent banking network led to a pyramiding of interbank deposits with most of the deposits being concentrated in New York.

Many of the large New York national banks were members of the New York Clearing House Association, and these banks, through the Clearing House, collectively tried to perform the function of the lender of last resort in the US banking system. Because interest was being paid on the bankers' balances, the correspondent New York banks would lend these funds out in the New York call loan market to earn a return sufficient to pay the interest. During normal periods this practice worked well because the New York correspondent bank could easily satisfy the country bank's demand for deposits by calling in some of these liquid loans. However, during a financial crisis, when many of the country banks were demanding the return of their deposits, these demands often could not be met simultaneously without producing a sharp decline in stock prices and widespread bankruptcy.

Sprague documents the important role of the withdrawal of country bank deposits in each of the major crises that he studies.[17] James argues that the correspondent banking system was an efficient response to the prohibition of branch banking for the purpose of allocating resources and while it may have served to increase the instability of the banking system, the crucial underlying cause of the instability was the lack of an effective lender of last resort.[18]

These different but related elements of the US banking system contributed to the frequent occurrence of financial disruptions, because they created a precarious condition of the financial system which could easily deteriorate after a shock. The typical financial crisis began in New York with a shock such as a bank failure, a large nonfinancial bankruptcy or a sharp downturn in the stock market, which led to unforeseen large deposit withdrawals, or loan defaults.The banks affected would begin to call in some of their loans, which in turn would prompt other banks to do the same. Country banks catching wind of a pending crisis would begin to demand their correspondent deposits from city banks. These factors would cause the financial stringency to spread to other banks in New York, Chicago and other financial centres in the US. On some occasions, the shortfall in reserves in New York was alleviated by member banks borrowing reserves from a pool formed by the New York Clearing House Association and/or by these banks receiving gold deposits from abroad that were attracted to New York by the relatively high interest rates. In such instances the process reversed itself and the financial crisis was less severe and of fairly short duration.

However, in more serious cases in which sufficient reserves could not be obtained, the financial stringency generated bank runs as the public became aware of the potential insolvency of a bank or group of banks. Without an effective lender of last resort, these bank runs could lead to a large-scale banking panic through a contagion effect as the public at large converted deposits into currency and thereby pushed otherwise sound banks to the brink of insolvency. In such instances a suspension of payments temporarily halting the convertibility of deposits to currency was imposed to end the pressure on the banking system.[19]

J.A. Miron characterised these financial crises by writing that 'the key element of a panic was the same in all of the major episodes . . . a generally increased demand for reserves that could not be satisfied for all parties simultaneously in the short run'.[20] This was certainly the case in the five major crises considered by Sprague.[21] In addition, Kemmerer, who carefully examines the seasonal demand for money and credit, remarks that the vast majority of all financial crises (major and minor) began in either the spring or the autumn.[22]

During this period, the Canadian chartered banks were beginning to establish themselves in the United States (see Table 2). Indeed, almost all of the banks set up some mechanism for conducting financial transactions in New York immediately after receiving their charters. Chicago and to a lesser extent San Francisco were also chosen by Canadian banks as locations for their financial activities in the US. The American operations of a Canadian bank usually began with the appointment of a local resident (an individual or a company) to act as an agent to carry out transactions on the bank's behalf. Initially most of these transactions, especially those in New York, involved financing merchandise trade and dealing in foreign exchange. Some banks, most notably the Bank of Montreal, were very active at an early stage in lending in the New York call loan market.

With economic growth and the maturing of financial systems in both Canada and the US the business of the Canadian banks in New York and other American cities expanded steadily. Most of the major banks found it necessary to establish a more visible and concrete presence in the US, and opened offices staffed by their own employees to carry out the business that was previously conducted by their agents.

The offices of Canadian banks were officially called 'agencies' in states like New York where state banking laws restricted the activities of foreign-owned banks, and 'branch banks' in the states like California and Illinois in which foreign-owned banks were not as severely restricted.[23] In particular, agencies could conduct the same types of business transactions as branches except that they could not take deposits at the local office. However, there is much evidence that the New York offices of Canadian chartered banks did in fact take deposits. For example, both the Bank of Montreal and the Bank of Nova Scotia have records of deposits in their ledgers attributed to their New York offices.[24] The most likely explanation of these deposits is that, although the deposits may have been made at the New York office, they were actually booked by the bank's head office in Canada to get around the legal restrictions. Hence, for the purpose of this paper, the difference between agencies and branches is not significant.[25] What is significant, however, is that these offices were able to and did in fact take deposits from US residents during this period of time.[26]

Although little documentary evidence exists of the activities of

Canadian chartered banks during US banking crises over the years from 1870 to 1914, there is some anecdotal evidence. For example, Denison quotes E.S. Clouston, General Manager of the Bank of Montreal, as telling the Bank's shareholders at the annual meeting in June 1894 that during the 1893 crisis in the US 'Canadian currency was actually resorted to for the purpose of commerce and the payment of wages'.[27] Denison also reports that the Chicago branch of the Bank of Montreal had to come to the aid of midwestern US banks by bringing in currency from Canada during the 1907 crisis.[28]

It is important to recognize that during this unstable period of US banking history the Canadian banking system and, in particular, the larger chartered banks that were operating in the United States, had established a strong reputation for financial stability. For example, the Bank of Montreal, the largest bank on the continent during this period, had been operating in New York since 1818 and in Chicago since 1861. In his assessment of the Canadian banking system for the National Monetary Commission, J.F. Johnson writes: 'Canada has probably had fewer such incidents (*bank failures*) in the last generation than most countries.' [italics added] (p. 124), 'The level of reserves seem to be abundant for the protection of liabilities. (p. 128), and 'The Canadian banking system possesses features of extraordinary merit.' (p. 128).[29]

Table 3 provides some basic statistics on the Canadian and US banking systems over this period as well as two measures of the bank failure rate. Before these failure rate measures are discussed in detail, it is worth noting that while every effort has been taken to achieve comparability with these data, there are still a few important differences. In particular, the statistics for the US banking system displayed in Table 3 cover national banks only; state banks are not included because comprehensive data are not available. Since national banks were on average larger than state banks because the paid-up capital requirements for national banks were often much larger than for state banks, the omission of state banks from the calculation of the US bank failure rates undoubtedly understates their value by a significant amount.[30] In Canada, all banks are national in the sense that they receive their charters from the federal government and can operate in all parts of the country.

Furthermore, in Table 3 the bank failure rate that is calculated by dividing the number of failed banks by the total number of banks indicates that the US banking system on average was more stable than the Canadian banking system over this period (0.36 versus 0.85 respectively). However, this failure rate comparison is misleading because the Canadian banking system is a branch banking system while the US system of national banks is a unitary system; a bank in the Canadian system with several branch offices is not strictly comparable to a US bank with only one office. To remedy this inconsistency (which is essentially an integer problem), the failure rates are recalculated by dividing the capital of the failed banks by the total capital of all banks in the system.[31] With this measure the bank failure rate in Canada is approximately 25 per cent lower than the US rate for national banks.

Moreover, the calculation of a lower failure rate for the Canadian banking system based on relative size rather than number of banks is consistent with other evidence that indicates that many of the Canadian banks that failed during this period were small banks with perhaps one or two branches. R.M. Breckenridge writes:

> The record of Canadian bank mortality for recent years, thus far set forth, has been concerned with the troubles of comparatively small and more or less insignificant members of the system. The reason for this is close at hand – none but small banks have failed.[32]

Indeed, it can be roughly estimated from Table 3 that the average size of a failed bank in Canada was $865,000 and in the US it was $163,000, while the average sizes of all Canadian and US banks over this period were $1,855,000 and $191,400 respectively. Therefore, compared to the overall averages the typical failed Canadian bank was relatively much smaller at 47 per cent than the typical failed US bank at 85 per cent. Hence the Canadian banks that failed were not representative of the entire banking system.

Over the period of 1870 to 1914 the Canadian banking system was very much a two-tiered system, with one group of large banks with many branches, chiefly located in Ontario and Quebec, and a second group of small banks primarily located in the Atlantic and Prairie provinces. Significantly, the bank failures that did occur were almost always second-tier banks, while virtually all the banks with operations in the US were in the first tier. Indeed only one Canadian bank with US operations experienced severe financial difficulties during this period. This was the Sovereign Bank of Canada which received its charter in 1901, operated an office in New York, and was voluntarily liquidated in 1908. All of its deposit liabilities were assumed by several large Canadian banks, including the Bank of Montreal.

The Canadian banking system was distinctly different from the US banking system over the period of 1870–1914, and the differences that did exist were primarily responsible for the relative strength and stability of the Canadian system. The most obvious and most significant distinction was that Canadian bank regulation permitted branch banking while US regulation did not. As a result, Canadian banks typically had several branches and the larger banks had branches across the country. This meant that Canadian banks were on average much larger than US banks (see Table 3) and, therefore, were better able to diversify the risk of their asset portfolio and reduce the probability of failure. The geographic distribution of branches also facilitated diversification and it allowed banks to efficiently allocate capital across Canada. Consequently, interest rate spreads across Canada were normally less than one or two per cent whereas across the United States the spreads were often three or four times greater. Another important difference was that the paid-up capital requirement for Canadian chartered banks was $250,000 while for national banks in the US it was $50,000. Once again this tended to have the effect of increasing the average size of Canadian banks relative to American ones and thereby reducing the possibility of failure. In his annual speech as President of the Canadian Bankers' Association, B.E. Walker discusses other differences between the two banking systems which he argues favour the Canadian system.[33] Apart from those already mentioned, the most interesting difference he mentions was that the security for Canadian bank notes was a first lien on the entire assets of the bank issuing the notes, whereas for US national bank notes the security was the bank's holdings of US government bonds. He argues that this difference in regulation made the Canadian supply of currency more elastic to the volume of trade than the US currency supply because bank assets were likely to be positively correlated with the amount of economic activity (i.e. more activity increases the demand for credit and thus the amount of bank lending). In contrast, in the United States the supply of currency was not very responsive to the level of economic activity and this was an important contributing factor to many of the banking crises that occurred over this period, as noted earlier.[34]

To summarise, the Canadian banking system and, in particular, the group of Canadian banks with operations in the US, represented a viable and secure alternative to local American banks for deposits. Whether the Canadian banks actually fulfilled this potential role and increased their share of US deposits during periods of financial distress in the US banking system is an empirically testable hypothesis.

II

Theoretical Model and Empirical Implementation

The theoretical model developed in this section is of a representative American depositor making the decision to allocate his bank deposits between US banks and branches of Canadian banks operating in the United States. It is assumed that all Canadian branches are perfect substitutes for each other (i.e. they all pay identical deposit rates and have the same risk characteristics). Similarly all American banks are assumed to be perfect substitutes for one another.[35] Therefore, the deposit decision boils down to Canadian versus American banks.

The American depositor is assumed to choose between the US and Canadian banks based on the interest rates these two banks promise to pay on the deposits they receive and the probabilities that they might default on these deposits. Therefore, the share of the investor's total deposits held in Canadian banks is a function of the difference in the promised interest rates and the difference in the probabilities of default. This intuitive result is rigorously derived in the Appendix using a simple portfolio choice model. The empirical model, which is obtained from the theoretical model by aggregating over all depositors, incorporates this basic intuition; it is represented by the following equation:

$$\log \frac{D^*}{W_T} = \alpha + \beta_1(d^* - d) + \beta_2(r^* - r) + \epsilon \qquad (1)$$

where D^*/W_T is the share of Canadian deposits in total deposits, d^*, d are the probabilities of Canadian and US banks *not* defaulting, r^*, r are the promised returns on deposits in Canadian and US banks, and ϵ is a random error term that has zero mean and constant variance.

Equation (1) represents a well-specified regression model of the share of deposits held in US branches of Canadian banks. According to the theoretical model, the slope coefficients in equation (1), β_1, β_2, should be positive. Thus, the test of the hypothesis that Canadian banks increased their share of total American deposits during periods of financial distress in the United States is simply a statistical test of whether β_1 is significantly positive. During such periods, banks and other financial institutions in the United States were pushed toward insolvency. As a result, investors would revise their subjective probabilities of losing their deposits, which implies that the term $(d^* - d)$ would increase.

III

Data

This section describes the data used to estimate the empirical model given by equation (1). In addition, the sources of the data and some of the problems associated with the data are discussed.

Comprehensive data on deposits held by the Canadian chartered banks in the United States over the period from 1870 to 1914 are not available. Unfortunately, the data on foreign activities provided by the chartered banks in their monthly financial reports to the Canadian government's Minister of Finance were not collected on a consistent basis and proved inadequate in estimation.[36] In an effort to remedy the data problems surrounding the foreign activities of Canadian banks, Rich uses the general ledger of the Bank of Montreal to compile data on foreign deposits and loans in different countries over this period.[37] His unpublished quarterly data (1888:1–1909:4) on US deposits in New York held by the Bank of Montreal proved to be the most useful for the purpose of testing the hypothesis of interest.[38]

Data on total deposits held by US banks in New York were taken from the weekly reports of the New York Clearing House Association.[39] These reports were originally published in the *Commercial and Financial Chronicle*, but were later compiled by A. Piatt Andrew and published in a volume of financial statistics for the National Monetary Commission.[40] The weekly data were averaged to obtain a quarterly series. The deposit data from the reports of the New York Clearing House are used because these data are comparable to the deposit data for the Bank of Montreal. These reports included all banks that were members of the Clearing House; these banks consisted of the commercially most important national and state banks in New York – the banks most likely to compete with the Bank of Montreal for deposits.[41] The total deposit series employed in estimation (the variable W_T in equation (1)) is the sum of total New York Clearing House deposits and the deposits of the New York branch of the Bank of Montreal.

Two types of variables are used to capture shifts in the subjective probabilities of default by US banks relative to US branches of Canadian banks, the $(d^* - d)$ variable, during periods of financial instability. First, two sets of dummy variables are employed: one for Sprague's definition of major crises and the other for Kemmerer's definition of major crises. As was discussed earlier (see Table 1), Kemmerer's definition of major crises encompasses those examined by Sprague, plus several more. The dummy variables take a value of one during the crisis and zero at any other time. The second variable used to measure shifts in the difference between the default probabilities is the ratio of currency reserves (specie and US legal tender notes) to deposits for all member banks of the New York Clearing House. Since the crises defined by Sprague and Kemmerer are subject to debate over what constitutes a significant financial crisis, the reserve ratio serves as an alternative, more objective, measure. Member banks in the New York Clearing House were required to hold a minimum 25 per cent currency reserve and the average reserve ratio for all banks was published in the weekly reports.[42] Over the period 1888:1 to 1909:4 the reserve ratio fluctuated between 22.3 per cent to 41.1 per cent, averaging 27.9 per cent. More importantly, the reserve ratio was consistently below average during periods of financial distress.[43] Therefore, depositors had a useful and timely indicator of the financial stability of the larger New York banks. Hence, based on the theoretical model the coefficients on the dummy variables and the reserve ratio variable which are employed as proxies for (d^*-d) are expected to be positive and negative respectively.

A consistent series on the differential in interest rates paid on US deposits by Canadian and US banks could not be obtained. In particular data on interest rates paid by Canadian banks on US deposits are not available. As a result this variable was omitted from the regression equation with the recognition that this could bias the other coefficient estimates.[44]

V

Empirical Results

The regression results from the estimation of equation (1) over the sample period 1888:I to 1909:IV are given in Tables 4 and 5.[45] Table 4 presents the results from the regressions using a dummy variable for the banking crises as defined by Sprague and Kemmerer. Table 5 displays the results from employing the New York Clearing House reserve ratio to measure shifts in the relative probability of default. The dependent variable in each regression is the natural logarithm of the ratio of deposits held by the New York branch of the Bank of Montreal to total New York deposits.

In addition to the dummy variables for the banking crises, another shift variable was included in half of the regressions reported in Tables 4 and 5 because preliminary analysis of the Bank of Montreal deposit data indicated a potential problem. This series is displayed in Figure 1. The most striking feature of the plot is the jump in the level of deposits that takes place after 1901:III. The means of the data before and after this point are significantly different at the one per cent level.[46] *A priori*, it is not obvious why the level of deposits increased so dramatically. While there are many possible explanations including measurement error, the most likely is a change in policy by the Bank of Montreal to expand aggressively the level of foreign banking activity. Some support for this hypothesis of increased foreign activity is provided by M. Denison, who states that 'the Bank of Montreal's placing of call loans in the United States and Britain during this period was pursued on a scale unthought of by its rivals'.[47] To capture this apparent shift in policy, a dummy variable which takes the value of one for the period 1901:III to 1909:IV was included in column II of the regression results presented in Tables 4 and 5.

The results in Table 4 provide strong support for the hypothesis that the Bank of Montreal increased their share of total deposits in New York during major banking crises. The estimated coefficients on the crisis dummy variables are positive in all cases and in three out of four cases the null hypothesis of the coefficient being equal to zero can be rejected at the five per cent level. The coefficients on the crisis dummy variables are larger and the overall fit of the regression equations is marginally better under Sprague's definition of a major crisis than under Kemmerer's definition. The inclusion of the shift dummy variable for the period after and including 1901:III cannot be rejected at the one per cent level in both cases and the fit of each regression improves as a result. Finally it should be noted that the equation was also estimated using a crisis dummy variable for both minor and major crises under Kemmerer's definition. The estimated coefficient on the crisis dummy variable was positive but not significantly different from zero with or without the shift dummy variable. Hence it seems that only the major crises, especially those defined by Sprague in 1890, 1893 and 1907, produced significant increases in the Bank of Montreal's share of total New York deposits.

The results in Table 5 provide additional support for the hypothesis of an increased deposit share as the estimated coefficient on the reserve ratio is negative and significantly different from zero at the ten and five per cent level respectively in the two cases.[48] The negative coefficient on the reserve ratio implies that low reserves caused depositors to raise their subjective probability of default by member banks of the New York Clearing House. Once again the inclusion of the shift dummy variable improves the quality of the regression results.[49]

The results from the regressions of Equation (1), which are given in

Tables 4 and 5, indicate that the share of total New York deposits held by the New York branch of the Bank of Montreal, D^*/W_T, increased on average during the banking crises that took place over the sample period. This deposit share could have increased if either deposits at the Bank of Montreal, D^*, rose while total New York deposits, W_T, remained constant, which implies that US depositors shifted their deposits from US banks to the Bank of Montreal, or deposits at the Bank of Montreal remained constant and total deposits fell, which implies that US depositors took their deposits out of New York Clearing House banks and held the proceeds in other assets including cash. Undoubtedly the truth lies between these two extremes.

However, even if the Bank of Montreal's share in total New York deposits increased during banking crises solely because of a fall in total deposits it is still possible to infer that deposits at the Canadian bank were perceived as being relatively safer than those at US banks. If there was no perceived difference in safety, the withdrawals of deposits would have been proportionately the same across all banks so that the deposit share would have remained unchanged. This argument is consistent with the theoretical model from which equation (1) is derived.

Nonetheless, it should be noted that the primary result of the theoretical model, i.e. that the allocation of deposits is affected by the difference in the probabilities of default, depends on the key assumptions that all US depositors are the same and that the only return from a deposit is the interest payment. Since the member banks of the New York Clearing House were the focal point of the US correspondent banking system, a significant portion of the deposits of these banks (approximately 44 per cent over the sample period) were bankers' balances, belonging to hundreds of state and national banks around the country.[50] Despite the fact that these deposits typically earned interest (they could also be counted as required reserves for national banks), they were primarily held to facilitate a wide variety of banking transactions.[51] To a large extent these banking services could not have been provided by branches of Canadian banks. As a result the amount of such interbank deposits held by Canadian banks was probably quite small. Therefore, in the event of a banking crisis, country banks would have tried to have their deposits at New York banks withdrawn and the funds transferred back to their home offices. It is unlikely that they would have shifted their deposits to Canadian banks. Thus total New York deposits could have fallen and the Bank of Montreal's share of these deposits risen without the implication that deposits at the Bank of Montreal were perceived as being safer.

To determine empirically whether the Bank of Montreal's share in total New York deposits rose because of an increase its deposits or because of a fall in total deposits, it is necessary to investigate whether the absolute level of deposits at the New York branch of the Bank of Montreal was affected by the banking crises that occurred over the sample period. The most straightforward means of addressing this empirical question is to rerun the regressions of equation (1) with the absolute level of the Bank of Montreal's deposits as the dependent variable.

The estimation results are given in Table 6. Three regressions were run, one for each measure of the difference in probabilities of default – the Sprague major crisis dummy, the Kemmerer major crisis dummy and the New York Clearing House reserve ratio. While the estimated coefficients on these variables are not statistically significant at the ten per cent level, their signs are consistent with the hypothesis that the Bank of Montreal's deposits increased on average during periods of financial distress.

Hence, these results imply that the statistical significance of the earlier results with the Bank of Montreal's share in total New York deposits as the dependent variable were due in part to an increase in deposits at the Bank of Montreal during crisis periods and also due to a concomitant fall in total New York deposits. The remaining question, which unfortunately cannot be answered with the available data, is how much of the fall in total deposits was due to withdrawals of correspondent banks which were holding these deposits primarily to facilitate banking transactions and how much was due to withdrawals by depositors who under normal circumstances could have held deposits in both Canadian and US banks.[52]

The essential problem here is that the available data do not permit a clear definition of the deposit market in which Canadian and US banks were close competitors. As mentioned above, US branches of Canadian banks could not compete with US banks for bankers' balances because of regulatory and institutional reasons. Therefore, if the fall in total New York deposits that took place during the crisis periods was solely a decline in bankers' balances, then it would be harder to argue that the increase in the Bank of Montreal's share of deposits was due to the fact that deposits at the Canadian bank were perceived as being safer. However, it is unlikely that the whole decrease could be explained by the withdrawal of correspondent bank deposits. Moreover, while the Bank of Montreal had at most two per cent of total New York deposits, it undoubtedly had a much larger share of a deposit market in which it was competitive with US banks. Therefore, although some uncertainty about the economic significance of the results in Tables 4 and 5 is created by not being able to define the appropriate market clearly, it is reasonable to argue given the results in Table 6 that if the appropriate market could be defined, the Bank of Montreal's share of total deposits of this market would be found to have increased significantly during periods of financial distress. Such a finding would imply that the Bank of Montreal's deposits were perceived as being safer than the deposits of competing US banks.

In summary, the empirical results given in Tables 4, 5 and 6 indicate that the Bank of Montreal undoubtedly increased its share of the New York deposit market in which it was competitive with US banks. From these results it can be inferred that the Bank of Montreal provided a safe haven for deposits during banking crises that took place in New York over the sample period.

V

Concluding Remarks

The purpose of this paper is to investigate the role played by Canadian chartered banks in the United States during the relatively unstable period of US banking history prior to the formation of the Federal Reserve system in 1914. The specific objective is to test the hypothesis that the US branches of Canadian banks increased their share of US deposits and therefore served as a safe haven for US deposits during banking crises that occurred over the period 1870 to 1914.

The Canadian banking system was relatively more stable than the US banking system over this period; the failure rate for Canadian banks was significantly lower than for comparable US banks. Furthermore, branch offices of several Canadian banks had been established in many of the larger US banking centres to engage in various activities, primarily lending, but these branches also took deposits from US residents. Thus, it is of interest to determine whether US depositors incorporated this reputation for stability into their behaviour.

To test whether Canadian banks actually played the role of providing a safe haven for US deposits during US banking crises a simple optimizing model of the deposit decision of a US depositor is developed. From this theoretical model a single-equation regression model is derived that is estimated with data on deposits in New York. The regression results provide support for the 'safe haven' role of Canadian banks as the share of total New York deposits of the New York branch of the Bank of Montreal is found to increase significantly during periods of severe financial distress in the United States. Furthermore, these empirical results support the anecdotal evidence obtained from statements made by prominent Canadian bankers that Canadian banks played a stabilising role in US banking crises.

Although the share of total deposits in the United States held by Canadian banks probably remained less than one per cent throughout this period (the Bank of Montreal was the Canadian bank with the largest operations (by far) in the United States and it had at most a two per cent share of total deposits in New York), this small share may understate the role of Canadian banks in the US market. In particular, the primary function of the US branches of Canadian banks was not to solicit deposits of every size. Like many present-day foreign banks, these US branches undoubtedly went after the large deposits because their operations were not extensive enough to handle a large number of small transactions profitably. Hence their share of the deposit market in which they were actively involved was probably several times greater than their share of total deposits. Thus, the finding that the share of deposits attributed to these banks went up significantly during US banking crises is important because this role as a safe haven undoubtedly enhanced the reputation for stability that the Canadian banks enjoyed and facilitated their expansion in the US financial market.

Appendix: The Theoretical Model

In this appendix a simple model is developed of the deposit decision faced by a representative American depositor.[53] Essentially, the depositor's decision is to choose the allocation of his deposits between US and Canadian banks. To simplify the model greatly, this decision is assumed to be separable from his consumption–savings decision and his more general portfolio allocation problem among several types of different assets. The deposit decision can be viewed as one step or stage in his saving–investing algorithm.

Let W represent the total amount the depositor wishes to deposit with Canadian and US banks and assume his single period utility function is of the form:

$$U = U(\overline{W}, \sigma_W^2/2) \qquad (A1)$$

where $\overline{W}$ is the expected end-of-period value of his deposits including interest earned and σ_W^2 is the variance of the end-of-period value of his deposits. That is, the promised end-of-period value of his deposits is:

$$\widetilde{W} = [(1 + r^*)x + (1 + r)(1 - x)]W \qquad (A2)$$

and its expected value is:

$$\overline{W} = [(1 + r^*)d^*x + (1 + r)d(1 - x)]W \qquad \text{(A3)}$$

In equations (A2) and (A3), r^*, r are the promised interest rates (in per cent) paid on deposits in Canadian and US banks respectively, d^*, d are the subjective probabilities of Canadian and US banks *not* defaulting on the deposits, and x is the share of deposits in Canadian banks. For simplicity the only risk the depositor faces is that of the bank (Canadian or US) failing and defaulting on his deposit.[54] The variance of the end-of-period value of his deposits is given by:

$$\frac{\sigma^2_{\overline{W}}}{2} = [x^2\sigma^2_{R^*} + (1 - x)^2\sigma^2_R + 2x(1 - x)\,\mathrm{cov}(R^*,R)]\,\frac{W^2}{2} \qquad \text{(A4)}$$

where $R^* = (1 + r^*)$,

$R = (1 + r)$,

$\sigma^2_{R^*} =$ variance of the return on deposits at Canadian banks

$= [(1 + r^*) - (1 + r^*)d^*]^2d^* + [0 - (1 + r^*)d^*]^2(1 - d^*)$

$= (1 + r^*)^2(1 - d^*)d^*$,

$\sigma^2_R =$ variance of the return on deposits at US banks

$= (1 + r)^2(1 - d)d$ and

$\mathrm{cov}(R^*,R)$ is the covariance of the returns.

If the probabilities of defaulting are independent, then the covariance of the returns would be zero. The hypothesis that American investors viewed Canadian banks as a safer place to hold their deposits in periods of financial strain implies that the probabilities of default were not highly correlated. Therefore, the assumption is made that they are independent (i.e., $\mathrm{cov}(R,R^*)=0$).[55] This is an important maintained assumption of the model on which the test of the hypothesis is based. With this assumption and the derivations given above for the variances, (A4) can be rewritten as:

$$\frac{\sigma^2_{\overline{W}}}{2} = [x^2(1+r^*)^2(1-d^*)d^* + (1-x)^2(1+r)^2(1+d)d]\,\frac{W^2}{2} \qquad \text{(A5)}$$

The objective of the depositor is to choose x, the share of his deposits in Canadian banks, so as to maximize his utility. Thus from (A1) the necessary first order condition for a maximum is given by:

$$\frac{dU}{dx} = U_1\frac{d\overline{W}}{dx} + U_2\frac{d(\sigma^2_{\overline{W}}/2)}{dx} = 0 \qquad \text{(A6)}$$

where

$$U_1 = \frac{dU}{d\overline{W}}, \quad U_2 = \frac{dU}{d(\sigma^2_{\overline{W}}/2)},$$

$$\frac{d\overline{W}}{dx} = [(1 + r^*)d^* - (1 + r)d]W \qquad \text{(A7)}$$

and

$$\frac{d(\sigma_W^2/2)}{dx} = [x(1+r^*)^2(1-d^*)d^* - (1-x)(1+r)^2(1-d)d]W^2 \quad (A8)$$

Substituting equations (A7) and (A8) into equation (A6) and dividing through by U_1W obtains:

$$\begin{aligned} 0 &= (1+r^*)d^* - (1+r)d - \\ &\theta\{x[(1+r^*)^2(1-d^*)d^* + (1+r)^2(1-d)d] - (1+r)^2(1-d)d\} \end{aligned} \quad (A9)$$

where $\theta = -W\frac{U_2}{U_1}$ which measures relative risk aversion.

Solving equation (A9) for x gives the optimal share of deposits in Canadian banks:

$$x = \frac{(1+r)(d^*-d) + d^*(r^*-r)}{\theta\sigma^2} + \frac{\sigma_R^2}{\sigma^2} \quad (A10)$$

where

$$\sigma^2 = (1 + r^*)^2(1 - d^*)d^* + (1 + r)^2(1 - d)d \, .$$

In equation (A10) the first term in the expression for x represents the speculative portion of the deposit share since it is a function of the difference in the interest rates paid, the difference in the probabilities of no default, relative risk aversion and the total variance of the deposit returns, σ^2. The second expression is the minimum variance portion of the deposit share since it is chosen to minimise the variance of the end-of-period value of deposits. It is independent of relative risk aversion and its value depends on the relative riskiness of the two types of deposits.

From equation (A10) the direct effect of a decrease in d, an increase in the subjective probability of US banks defaulting in deposits held by them, is to increase x. (While decreasing d also effects σ^2 and σ_R^2, these effects are of a second order of magnitude.) Hence, according to the model, if the depositor perceives an increase in the likelihood of the insolvency of a US bank he will increase the share of his deposits held at a Canadian bank. It is important to note that the assumption made earlier of the independence of the probabilities of default of the two banks is responsible for this result.

In order to derive from this theoretical model an equation that can be estimated using aggregate data on deposits held at US branches of Canadian banks, both sides of equation (A10) are multiplied by the total value of deposits held by an individual investor, W_i; then aggregating over all investors obtains the following:

$$D^* = \frac{[(1+r)(d^*-d)+d^*(r^*-r)]}{\sigma^2\theta_T} W_T + \frac{\sigma_R^2}{\sigma^2} W_T \qquad \text{(A11)}$$

where $D^* = xW_T$,
$W_T = \Sigma_i W_i$, and
$\theta_T = \Sigma_i \theta_i \frac{W_i}{W_T}$.

In equation (A11) W_T is the total value of deposits made by all American investors, D^* is the value of deposits made at US branches of Canadian banks, and θ_T is the market value of relative risk aversion. All investors are assumed to hold the same values of d and d*, the subjective probabilities of no default.

Now dividing through both sides of (A11) by W_T, applying logarithms to both sides and then taking a linear approximation using a first-order Taylor expansion around the variables, $(d^* - d)$ and $(r^* - r)$, a regression model of the following form can be obtained:

$$\log(D^*/W_T) = \alpha + \beta_1(d^* - d) + \beta_2(r^* - r) + \epsilon \qquad \text{(A12)}$$

To capture random optimisation errors committed by depositors a disturbance term, ϵ, which has mean zero and a constant variance is included in the regression model.

NOTES

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1. For most of the twentieth century Canadian banks were a close second to British banks in terms of assets, loans and deposits in the US despite the fact that Canadian banks were, in overall size, much smaller than British banks. In the last ten years Japanese banks have become the dominant foreign banks with Canadian banks running third behind those of the UK. The Royal Bank, the Bank of Montreal, the Toronto Dominion Bank, the Canadian Imperial Bank of Commerce and the Bank of Nova Scotia are among the 20 largest foreign banks in the US. The five largest are all Japanese.
2. Properly measured, the failure rate of Canadian banks was much lower than that of comparable US banks. See Section 2 for more details.
3. The terms financial or banking crises and periods of financial distress, strain or stringency are employed generically in this paper to refer to episodes of increased actual (potential) insolvency of financial institutions (typically banks) in the United States.
4. O M. Sprague, *A History of Crises Under the National Banking System*, National Monetary Commission, S.Doc. 538, 61st Congress, 2nd session (Washington, 1910) and E.W. Kemmerer, *Seasonal Variations in the Relative Demand for Money and*

Capital in the United States, National Monetary Commission, S.Doc. 588, 61st Congress, 2nd session (Washington, 1910).

5. See, for example, J.A. James, *Money and Capital Markets in Postbellum America* (Princeton, NJ, 1978); R. Robertson, *The Comptroller and Bank Supervision: An Historical Appraisal* (Washington, 1968); R.E. Sylla, *The American Capital Market, 1846– 1914: A Study of the Effects of Public Policy on Economic Development* (New York, 1978); R.C West, *Banking Reform and the Federal Reserve, 1863–1923* (Ithaca, NY, 1977); or E.N. White, *The Regulation and Reform of the American Banking System, 1900–1929* (Princeton, NJ, 1983).
6. For more details refer to Robertson, *Comptroller and Bank Supervision*, pp. 27–9, 81–5 and 197, and White, *Regulation and Reform*.
7. Table I in S.A. Welldon, *Digest of State Banking Statutes*, National Monetary Commission, S.Doc. 353, 61st Congress, 2nd session, (Washington, 1910) provides an excellent summary of state banking legislation during this period.
8. Welldon, *Digest of State Banking*, is the authorative source on state law governing branch banking.
9. G. Barnett, *State Trust Companies and Trust Companies Since the Passage of the National Bank Act*, National Monetary Commission, S.Doc. 659, 61st Congress, 2nd session (Washington, 1910), p 136.
10. Barnett, *State Trust Companies*, p. 135.
11 White, in *Regulation and Reform*, uses regression analysis to find empirical evidence to support the argument that US federal and state banking legislation had the effect of reducing the average size of US banks.
12. Robertson, *Comptroller and Bank Supervision*, pp. 57–62; Sylla, *American Capital Market*, pp. 47–78; and White *Regulation and Reform*, pp. 10–62.
13. Kemmerer, *Seasonal Variations*, contains a detailed analysis of seasonality and money demand during this period. J.A. Miron, 'Financial Panics, the Seasonality of the Nominal Interest Rate, and the Founding of the Fed', *American Economic Review*, Vol. 76 (1986), pp. 124–40 provides a useful recent survey of this issue.
14. See A.P. Andrew, 'The Treasury and the Banks under Secretary Shaw', *Quarterly Journal of Economics*, Vol. 21 (1907), pp. 519–68, and R.H. Timberlake, *The Origins of Central Banking in the United States* (Cambridge, MA, 1978) for more details.
15. James, *Money and Capital Markets*, Ch. IV provides a detailed description of the operation of the correspondent banking system.
16. In 1887 Chicago and St. Louis became central reserve cities
17. Sprague, *History of Crises*, pp. 306–7.
18. James, *Money and Capital Markets*, p. 121
19. It should be noted that during a suspension bank customers could still use their deposits to make transactions. Currency traded at a premium. Therefore Canadian banks operating in the United States would also have had to limit convertibility or they would be cleaned out of their cash reserves.
20. Miron,'Financial Panics', p. 130.
21. Sprague, *History of Crises*, pp. 1–225.
22. Kemmerer, *Seasonal Variations*, p. 223. For a more recent discussion of the impact of the seasonality of money demand on the occurrence of financial crises in the US, see Miron, 'Financial Panics'.
23. For more information on US state banking laws consult Welldon, *Digest of State Banking*.
24. Rich writes that 'Canadian banks also solicited deposits in New York', in *The Cross of Gold: Money and the Canadian Business Cycle, 1867–1913* (Ottawa, 1988) Note 2, p. 277. Other authors also mention the deposit-taking activities of Canadian banks in the US: for example, F.C. James, *The Growth of Chicago Banks*, 2 Vols. (New York, 1969), pp. 441 and 496; J. Schull and J.D. Gibson, *The Scotiabank Story* (Toronto, 1982), p. 19; I.B Cross, *Financing an Empire: History of Banking in California*, 3 Vols. (Chicago and San Francisco, 1927), Vol. I, p. 257 and Vol. III, pp. 129, 187–193; M. Denison, *Canada's First Bank* (Toronto, 1967), p. 160; Y. Ross, *A*

History of the Canadian Bank of Commerce (Toronto, 1922), p. 66; and J. Schull, *100 Years of Banking in Canada* (Toronto, 1958), p. 42.

25. The term 'branches' will be used throughout the paper to represent US offices of Canadian banks to emphasise that these offices did take deposits.
26. It should be noted however that the primary activities of US offices of Canadian banks were making loans, dealing in bills of exchange and conducting foreign exchange transactions; deposit-taking was of less significance. For more details see B.H. Beckhart, 'The Banking System in Canada', in H.P. Willis and B.H. Beckhart (eds.), *Foreign Banking Systems* New York, 1929); C.A. Curtis, *Banking Statistics in Canada*, Vol. 1 of *Statistical Contributions to Canadian Economic History* (Toronto, 1931); R.A. Shearer, 'The Foreign Currency Business of the Canadian Chartered Banks', *Canadian Journal of Economics and Political Science*, Vol. 31 (1965), pp. 328–57 and C.A.E. Goodhart, *The New York Money Market and the Finance of Trade, 1900–1913* (Cambridge, MA, 1969).
27. Denison, *Canada's First Bank*, p. 260.
28. Ibid., p. 295
29. J.F. Johnson, *The Canadian Banking System*, National Monetary Commission, S.Doc. 583, 61st Congress, 2nd session (Washington, 1910).
30. The minimum paid-up capital requirement for state banks in New York and Illinois was $25,000 while the minimum capital requirement for national banks specified under the National Bank Act was $50,000. In some states in the US South and West the capital requirement was only $5,000.
31. Paid-up capital is employed as a measure of relative size rather than deposits or assets because comprehensive data on these latter two items are not available.
32. R.M. Breckenridge, *The History of Banking in Canada*, National Monetary Commission, S.Doc. 332, 61st Congress, 2nd session (Washington, 1910).
33. B.E. Walker, 'Banking in Canada', *Journal of the Canadian Bankers Association*, Vol. 1 (1983), pp. 1–25.
34. West, *Banking Reform*, pp. 46–9 and White, *Reform and Regulation*, pp. 205–7 examine the relative stability of the Canadian banking system as compared to the US system.
35. Obviously, the assumption that the risk and return profile is the same for all Canadian banks as a group and for all US banks as a group is not strictly correct, especially for US banks. However, in the empirical analysis only US national and state banks that were members of the New York Clearing House, and, therefore, were of comparable quality, are considered.
36. The data from the Canadian chartered banks' monthly reports to the Minister of Finance are published in *The Canada Gazette*. The most significant problem with the data is that, until July 1900, the only measures of the foreign activities of Canadian banks in these reports are the data collected under the headings 'Balances due to Banks and Banking Correspondents Elsewhere than in Canada' and 'Balances due from Banks and Banking Correspondents Elsewhere than in Canada'. These balances represent net figures in the sense that if a foreign branch had both an amount owed to the head office (e.g. funds borrowed by the foreign branch from the head office to make a foreign loan) and an amount owed to it from the head office (e.g. a foreign deposit held by the head office on behalf of the foreign branch), only the difference between the two would be reported as a 'balance due from' (if foreign loans exceeded foreign deposits) or as a 'balance due to' (if foreign deposits exceeded foreign loans). These balances included not only amounts due to or from affiliated foreign branches but from other non-affilliated foreign banks as well. Curtis, *Banking Statistics*, p. 5, provides more details. In addition the consistency of reporting foreign activities among Canadian banks was poor. Rich, *Cross of Gold*, pp. 273–4, points out that some banks completely consolidated the deposits and loans of foreign branches into their own accounts while other banks reported the activities of foreign branches in the balances due to and due from categories. Furthermore, it was only after

August, 1873 that the balances due to and due from categories were split into separate ones for the US, and for the UK and elsewhere. In 1900 changes to the reporting procedures were implemented to require Canadian banks to report their foreign loans and deposits. Although this change served to improve the quality of the foreign deposit data, banks only had to report total foreign deposits – disaggregation by country of origin was not required. As a result, sizeable UK, Caribbean and Newfoundland deposits are included with those held in the United States.

37. Rich, *Cross of Gold*, Appendix B.
38. The reported deposit figures for member banks of the New York Clearing House are actually 'net deposits': the sum of deposits held by nonbank individuals and the net amount of bankers' balances (i.e. balances due to other banks less those due from other banks (the latter amount being approximately one tenth of the former)). For more details see M.G. Myers, *The New York Money Market, Volume 1: Origins and Development* (New York, 1931), p. 222 and J.G. Cannon, *Clearing Houses*, National Monetary Commission, S.Doc. 491, 61st Congress, 2nd session (Washington, 1910), p. 184.
39. Rich's data from the Bank of Montreal's general ledger included series on both demand and notice deposits. However, for the purpose of the estimation only demand deposits are used because notice deposits seem to have been rarely taken by the Bank of Montreal – only in 5 of 88 quarters are positive amounts of notice deposits reported.
40. A.P. Andrew, *Statistics for the United States, 1867–1909*, National Monetary Commission, S.Doc. S70, 61st Congress, 2nd Session (Washington, 1910).
41. It should be noted that the Bank of Montreal was not a member of the New York Clearing House Association. In contrast, the Bank of Montreal and the Bank of Nova Scotia were members of the Chicago Clearing House Association and the Bank of British Columbia and the Bank of British North America were members of the San Francisco Clearing House Association.
42. A. Myers, *New York Money Market*, p. 251, provides more details on reserve requirements for national banks in New York.
43. During each of Sprague's major crises over this period the reserve ratio fell below 25 per cent. While this was not true for all of Kemmerer's crises, the reserve ratio did fall below 26 per cent during his major crises.
44. The omission of the interest rate differential variable, (r^*-r), will bias the estimated coefficients on the variables used to measure the difference in the subjective probabilities of default. The size and direction of the bias will depend on the correlation between (r^*-r) and the variables measuring (d^*-d). *A priori*, it is reasonable to believe that (r^*-r) and (d^*-d) are inversely related because during a crisis (d^*-d) will rise and (r^*-r) may fall since Canadian banks could lower their interest rates relative to those paid by US banks and still maintain their level of deposits. In this case the estimated coefficients on the variables used to measure (d^*-d) will be biased towards zero. Also if these two variables are inversely related, the omission of (r^*-r) will not reverse the sign on the estimated coefficients on the variables measuring (d^*-d). See I. Visco, 'Again on Sign Changes Upon Deletion of a Variable From a Linear Regression', *Oxford Bulletin of Economics and Statistics*, Vol. 50 (1988), pp. 225–7, for more details.
45. In each case, the regression equation was estimated first by ordinary least squares (OLS), but for every OLS regression the Durbin Watson (DW) statistic was found to be less than one, thereby rejecting the null hypothesis of no first-order serial correlation of the error terms. These test results imply that the model is misspecified because they indicate that there are omitted variables which are serially correlated. Given the time series nature of the data employed in estimation this finding is not unusual. However in this instance it is less surprising for several reasons. First, only a relatively simple theoretical model could be specified and estimated because of the limited data available. Second, the interest rate differential on Canadian and US bank deposits, which is included in the theoretical model, is omitted when the model is

estimated. Third, the only quarterly data available on US deposits held by Canadian banks is for a single bank. Thus the level of deposits is undoubtedly affected by unobserved variables specific to the Bank of Montreal. Since it is difficult, if not impossible, to solve the problem of the omitted variables by respecifying the model, the regressions presented in Tables 4 and 5 incorporate the Cochrane-Orcutt correction for first-order serial correlation of the error terms. This correction was performed using the AR(1) command in MicroTSP. It should also be noted that the Cochrane-Orcutt transformation was performed on all the variables, including the dummy variables. G.S. Maddala, *Introduction to Econometrics* (New York, 1988), pp. 266–7, notes that this transformation may bias the coefficient estimates on the dummy variables in small samples. Nonetheless, these coefficient estimates are consistent and therefore unbiased asymptotically.

46. The mean level of deposits over the period 1880:I to 1901:II is \$1.8 million while the mean over the period 1901:III to 1909:IV is \$9.34 million. Assuming the population variances are the same in the two periods permits the derivation of a test statistic with a t-distribution that strongly rejects the null hypothesis that the population means are the same.
47. Denison, *Canada's First Bank*, p. 292. Another related explanation of the sharp increase in deposits at the New York branch of the Bank of Montreal after 1901 was the requirement, often imposed by banks during this period, that a borrower deposit a portion of a loan with the lending bank. Therefore, when loans increased so would deposits. However, it should be noted that although deposits and loans both increased sharply after 1901, regressions performed separately over the two subsamples, 1888:I to 1901:III and 1901:IV to 1909:IV, (with deposits as the dependent variable and loans as the explanatory variable) found no statistically significant relationship between the two variables.
48. The exogeneity of the reserve ratio as an explanatory variable was tested using a statistical procedure developed by J.A. Hausman, 'Specification Tests in Econometrics', *Econometrica*, Vol. 46 (1978), pp. 1251–71. This test was carried out by first obtaining the residuals from a regression of the reserve ratio on a set of instruments and then including the residuals as an additional explanatory variable in the regression of equation (1). The estimated coefficient on this variable was not significantly different from zero at the ten per cent level so that the null hypothesis of exogeneity could not be rejected. However, it is well known that the statistical power of this test depends on the quality of the instruments employed in the first regression. In this case because of limited data only two instruments (not including the constant term) were used: the Kemmerer major crisis dummy variable and a time trend.
49. Other regressions of equation (1) were also run. One set of regressions employed the New York call loan rate as a measure of shifts in the subjective probability of default of US banks relative to the Bank of Montreal. While the estimated coefficients were typically positive, which is consistent with the hypothesis of an increased share of deposits, they were rarely statistically significant. Also crisis dummy variables with values of one during and after the crisis were tried to capture permanent increases in the share of deposits held by the Bank of Montreal with little success. It seems that the increases in the deposit shares that did take place were only temporary.
50. This estimate of 44 per cent was calculated using annual data on national banks in New York from L.L. Watkins, *Bankers' Balances* (Chicago, 1929) Table 3, p. 19.
51. Myers, *New York Money Market*, p.229, argues that the National Banking Act which allowed national banks to treat bankers' balances as part of required reserves had little impact on the level of these deposits. Furthermore, she maintains (pp. 249–50) that the existence of correspondent bank deposits in New York was primarily due to the transactions these deposits facilitated not the interest rate paid on these deposits which was normally two per cent over this period. James, *Money and Capital Markets*, pp. 90–104 describes the various transactions facilitated by correspondent bank deposits.
52. The weekly reports filed by member banks to the New York Clearing House

Association, which is the primary source of deposit data for this study, did not require a disaggregation of deposits into various categories including bankers's balances. Cannon, *Clearing Houses*, p. 184, provides a sample copy of the weekly report.

53. This model is an adaptation of a model employed by R. Dornbusch, 'Exchange Risk and the Macroeconomics of Exchange Rate Determination' in R. Hawkins et al (eds.), *The Internationalization of Financial Markets and National Economic Policy* (New York, 1982).

54. It is assumed for convenience that when a bank fails the entire deposit is lost. In general this was not true since some portion of the deposit was usually recoverable. Depositors also faced the risk that they could not always convert their deposits to currency under a suspension of payments. The subjective probability of this occurring is undoubtedly highly correlated with the subjective probability of a bank failure.

55. The assumption of zero correlation (covariance) of the default probabilities can be relaxed, i e. the correlation can be set to a small positive fraction, without qualitatively altering the model's results

APPENDIX

TABLE 1

US BANKING CRISES, 1885–1909

Sprague:	Major Crises:	August to November 1890
		May to September 1893
		September 1907 to January 1908
Kemmerer:	Major Panics:	August to November 1890
		May to September 1893
		December 1899
		May 1901
		March to August 1903
		September 1907 to January 1908
	Minor Panics:	June 1887
		March to April 1888
		February 1893
		September to December 1895
		June to July 1896
		December 1896
		March 1898
		September 1899
		July 1901
		September 1901
		September to November 1902
		December 1904
		April 1905
		April to May 1906
		December 1906
		March 1907
		September 1908

Sources: O.M. Sprague, *A History of Crises Under the National Banking System*, National Monetary Commission, S. Doc. 538, 61st Congress, 2nd session (Washington, 1910). pp. 1 –225.

E.W. Kemmerer, *Seasonal Variations in the Relative Demand for Money and Capital in the United States*, National Monetary Commission, S. Doc 588, 61st Congress, 2nd session (Washington, 1910).

TABLE 2

OFFICES OF CANADIAN BANKS IN MAJOR US CENTRES

Bank	New York	Chicago	San Francisco	Seattle	Portland, Oregan	Boston	Minneapolis
Bank of British North America	1843–1918	1880–1886	1864–1918	1889–1896	1878–1883		
Bank of Montreal	1818–	1861–1952	1918–				
Canadian Bank of Commerce	1872–	1875–1886 1897–1900	1901–	1900–	1901–		
Merchants Bank of Canada	1875–1922						
Royal Bank of Canada	1899–						
Bank of Nova Scotia	1907–	1862–1940				1899–1942	1885–1892
Union Bank of Canada	1917–1925						
Dominion Bank	1919–						
Sovereign Bank of Canada	1901–1908						
Bank of British Columbia			1864–1901		1865–1901		

Notes: US agencies of Canadian banks are also included in the table.

Sources: G. Rich, *The Cross of Gold: Money and the Canadian Banking Cycle, 1867–1913* (Ottawa, 1988) Table B-1, p. 261. C.J. Howard, 'Canadian Banks in the United States', *Canadian Banker*, Vol. 61 (1954), pp. 94–100.

TABLE 3

BANK STATISTICS IN CANADA AND THE UNITED STATES: 1870–1909 (FIVE-YEAR AVERAGES)

Period	(1) Number of Chartered Banks	(2) Total Capital[b] ($000 CDN)	(3) Average Capital[b] per Bank ($000 CDN)	(4) Number of Failures[a]	(5) Failure Rate (in %) (4) ÷ (1)	(6) Capital of Failed Banks ($000 CDN)	(7) Failure Rate (in %) (6) + (2)	(8) Number of Domestic Branches
Canada								
1870–74	33.6	61416.3	1807.0	0.2	0.60	20.0	0.0003	189
1875–79	43.8	76179.6	1739.1	0.4	0.91	168.4	0.0022	263
1880–84	43.0	71360.5	1659.5	0.4	0.93	224.0	0.0031	315
1885–89	42.4	65781.6	1551.9	0.4	0.94	252.0	0.0038	369
1890–94	39.4	63017.7	1599.5	0.2	0.15	110.5	0.0017	478
1895–99	38.0	62608.5	1647.6	0.4	1.05	463.5	0.0074	581
1900–04	35.4	75313.9	2133.3	0.0	0.00	0.0	0.0	911
1905–09	34.6	94810.0	2707.2	0.6	1.73	189.5	0.002	1816
1870–1909[c]	38.8	71311.0	1855.6	0.33	0.85	285.5	0.0025	615
United States								
1870–74	1856.2	470624.4	254.1	4.0	0.21	1176.2	0.0025	
1875–79	2071.6	480862.9	232.0	9.2	0.44	1830.3	0.0038	
1880–84	2331.2	487690.3	210.0	4.8	0.21	759.3	0.0016	
1885–89	3009.0	571886.7	190.2	6.0	0.20	990.3	0.0017	
1890–94	3705.2	672369.8	181.5	27.4	0.74	4100.4	0.0061	
1895–99	3635.6	632883.0	174.1	24.0	0.66	3388.3	0.0054	
1900–04	4629.4	703135.4	152.7	10.2	0.22	1805.0	0.0025	
1905–09	6453.6	879498.7	136.4	14.0	0.22	2163.7	0.0025	
1870–1909[c]	3461.5	612368.9	191.4	12.45	0.36	2026.7	0.0033	

Notes (a) Voluntary liquidations and temporary suspensions of operations are excluded from the total number of failures. (b) Capital refers to the paid-up capital stock. (c) 40-year average (d) Canadian and US dollars traded at par during this period.

Sources B.H. Beckhart, 'The Banking System in Canada', in H.P. Willis and B.H Beckhart (eds.), *Foreign Banking Systems* (New York, 1929), tables on pp. 334–8. R.M Breckenridge, *The History of Banking in Canada*, National Monetary Commission, S. Doc. 332, 61st Congress 2nd session (Washington, 1910) Appendix IV, p 287 and Appendix IX, p. 310. C.A. Curtis, *Banking Statistics in Canada*, Vol. 1 of *Statistical Contributions to Canadian Economic History* (Toronto, 1931) Table 1, pp 3–4. A.P. Andrew, *Statistics for the United States, 1867–1910*, National Monetary Commission, S. Doc. 570, 61st Congress, 2nd session (Washington, 1910), Table 17, pp. 41–7. US National Monetary Commission, *Interviews on the Banking and Currency System of Canada*, S Doc 584, 61st Congress, 2nd session (Washington, 1910), p 219.

TABLE 4

REGRESSION RESULTS: SPRAGUE AND KEMMERER BANKING CRISES

Dependent Variable: $\text{Log}\,\dfrac{\text{New York Deposits of Bank of Montreal}}{\text{Total New York Deposits}}$

Sample Period: 1888:I to 1909:IV – 88 observations

Explanatory Variables and Statistics	**Sprague Major Crises**		**Kemmerer Major Crises**	
	I	II	I	II
Constant	–5.41***	–6.16***	–5.42***	–6.20***
	(0.59)	(0.14)	(0.57)	(0.13)
Crisis Dummy	0.23**	0.22**	0.06	0.17**
	(0.11)	(0.11)	(0.08)	(0.08)
Shift Dummy		1.21**		1.30***
RHO	0.95***	0.78***	0.94***	0.76***
	(0.04)	(0.07)	(0.04)	(0.07)
R^{-2}	0.89	0.91	0.88	0.91
S.E E	0.27	0.24	0.28	0.25

Notes: Standard errors are in parentheses. All regressions were performed in MicroTSP using the AR(1) option. The following symbols indicate: ***statistically significant at 1% level, **statistically significant at 5% level, and *statistically significant at 10% level.

TABLE 5

REGRESSION RESULTS· NEW YORK CLEARING HOUSE RESERVE RATIO

Dependent Variable. $\text{Log}\,\dfrac{\text{New York Deposits of Bank of Montreal}}{\text{Total New York Deposits}}$

Sample Period· 1888:I to 1909:IV – 88 observations

Explanatory Variables and Statistics	I	II
Constant	–4.84***	–5.33***
	(0.63)	(0.39)
Reserve Ratio	–0.022*	–0.03**
	(0.014)	(0.013)
Shift Dummy		1.23***
		(0.16)
RHO	0.94***	0.71***
	(0.04)	(0.08)
R^{-2}	0 89	0.91
S.E.E.	0.27	0.24

Notes: Standard errors are in parentheses. All regressions were performed in MicroTSP using the AR(1) option. The following symbols indicate: ***statistically significant at 1% level, **statistically significant at 5% level, and *statistically significant at 10% level.

TABLE 6

REGRESSION RESULTS: NEW YORK DEPOSITS OF THE BANK OF MONTREAL

Dependent Variable: Log New York Deposits of Bank of Montreal

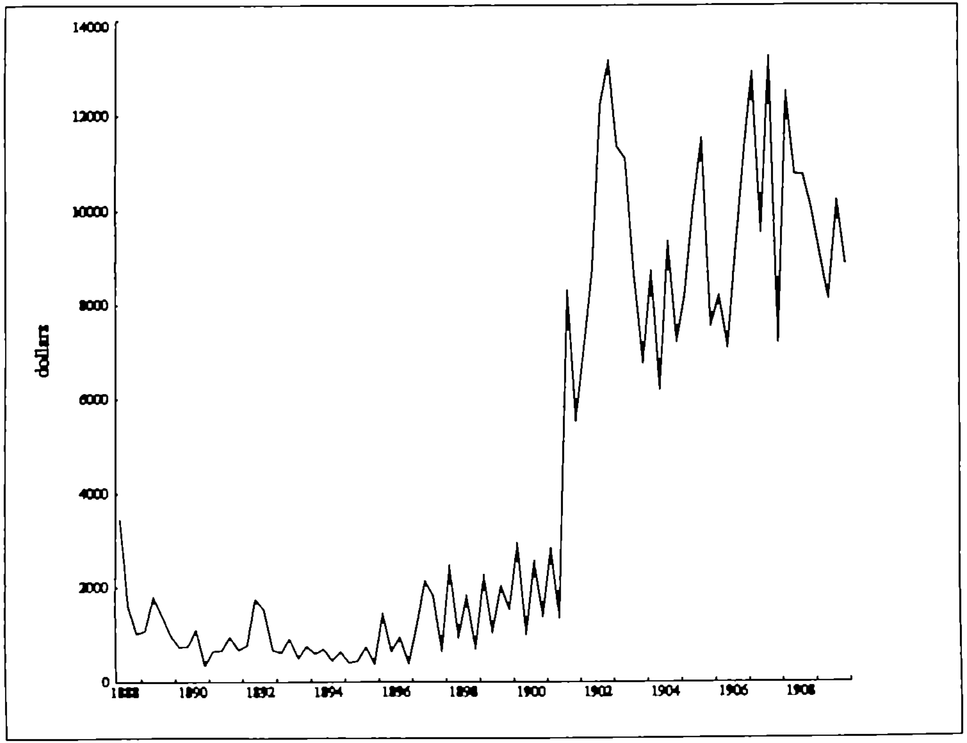
Sample Period: 1888:I to 1909:IV – 88 observations

Explanatory Variables and Statistics	**Sprague Major Crisis**	**Kemmerer Major Crisis**	**Clearing House Reserve Ratio**
Constant	7.73***	7.60***	7.88***
	(0.52)	(0.44)	(0.57)
Crisis Dummy	0.16	0.11	
	(0.10)	0.08	
Reserve Ratio			–0.007
			(0.012)
Shift Dummy	0.93***	1.06***	0.95***
	(0.25)	(0.25)	(0.26)
RHO	0.94***	0.93***	0.94***
	(0.04)	(0.04)	(0.04)
R^{-2}	0.95	0.95	0.95
S.E.E.	0.24	0.25	0.25

Notes: Standard errors are in parentheses. All regressions were performed in MicroTSP using the AR(1) option. The following symbols indicate: ***statistically significant at 1% level, **statistically significant at 5% level, and *statistically significant at 10% level.

FIGURE 1

NEW YORK DEPOSITS OF THE BANK OF MONTREAL
1888:I – 1909:IV ($000)



Global Competitiveness and Public Policy: The Case of Canadian Multinational Banks

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In 1960, the Royal Bank of Canada, the Bank of Montreal, and the Canadian Imperial Bank of Commerce (CIBC) ranked among the largest 12 banks in the world.[1] The next two largest, the Bank of Nova Scotia and the Toronto-Dominion Bank (TD) were clearly ensconced in the top 100. Combined, these five banks held 15 per cent of the international market.[2] Times have changed. Now, of the top 12, nine are from Japan, two from France and one from the US. Canada's largest bank, the Royal Bank of Canada which ranked 16th in total assets in 1981 fell to 53rd by 1987.[3] What explains the international standing and development of Canada's multinational banks (MNBs) in 1960?[4] One key factor was the relatively early international activities of the banks.

The theory of the multinational bank suggests that Canadian MNBs may be an anomaly. Gray and Gray asked the important question: do we need a separate theory for multinational banks?[5] The literature since then has not altered the earlier negative response, perhaps best summarised by Kindleberger.[6] Essentially the behaviour of MNBs is typical of other service firms: they follow clients. If MNBs primarily develop as 'followers', it is obvious that MNBs will develop in countries as outward flows of foreign direct investment increase. This theory has been broadly applicable to the development of MNBs in advanced trading and industrialised countries, such as the UK, the US and now Japan. Given the relatively few multinational enterprises (MNEs) in Canada, it cannot explain the position achieved by the Canadian banks by the 1960s.

Canadian MNBs developed in a country that was dependent upon inward flows of capital to develop its natural resource base. What characteristics made Canada a suitable base for MNBs? The answer lies in exploring the dialectic between the opportunities in international and domestic market environments fostered by Canadian public policy. Canadian regulation was instrumental in creating a protected market in which banks could develop competitive strengths, and these competitive advantages provided the cornerstone for international growth strategies. Moreover, the late development of Canadian inter-bank markets in relation to those of London and New York forced early international activities to manage short term asset and liability positions.

Canadian governments have always seen banking as a strategic sector and set regulation to achieve six clear policy objectives:

- stability to encourage the inward flow of capital;
- federally regulated chartered banks would be the dominant financial institutions in Canada;
- a Canadian controlled industry;
- the creation of an industry able to facilitate trade;
- the development of an infrastructure to assist government financing;
- an extensive system to provide services to the entire populace.

The structure and competitiveness of the Canadian banking system cannot be understood without recognizing the dominating national concern for stability. In order to ensure stability, public policy, especially since 1890, encouraged the development of a few, large banks. High barriers to entry based in public policy, sometimes at an informal level, have resulted in one of the most concentrated banking systems in the world.[7] This would not have been possible without the development of extensive branch networks. Consequently, the distinctive development of the branch system in Canada can be tied to concerns over stability. It may also reflect a British approach to banking, given Geoffrey Jones' work on the international activities of British banks.[8]

Moreover, inside the secure Canadian banking system, the banks were able to pursue different strategies in an orderly domestic market.[9] The same spirit which encouraged industry concentration further encouraged banks to seek complementary rather than directly competitive positions because competition does not promote stability. A stable oligopolistic market structure demanded that different competitors seek differentiated positions in order to avoid direct competition and its inevitable consequence of price competition. The creation of the Canadian Bankers' Association in 1891 was a key event in cementing and promoting the maintenance of orderly markets.

The choice of the chartered banks as the lead financial institutions relates once again to concerns over stability. Unlike provincially regulated investment dealers and some trust companies, chartered banks come under federal regulation. If the federal government wished to exert its power over financial markets, the chartered banks offered a better vehicle. Federal regulation has been a positive, not negative, factor in the development of internationally competitive banks as the history of Canadian banking shows.

Certain historical trends stand out and they can be developed by considering industry developments in six periods. The first period begins in 1792 and the first efforts to establish the Bank of Montreal. The other breakpoints centre on the passage and subsequent revisions to the Bank Act, the federal legislation which establishes the environment within which the banks formulate and implement their competitive strategies.[10]

- strangled trade and the origins of Canadian MNBs, 1792–1871;
- new nation, new national policy and new national banks, 1871–1900;
- mergers and new internationalisation, 1900–34;
- new corporate markets in Canada and abroad, 1934–67;
- the new international banking: the Euromarkets, 1967–80;
- global competition in Canada and Abroad, 1980–date.

As we will see, the history of bank regulation further reveals that regulation did not handicap the banks, but rather that banks received new powers virtually for the asking.[11] After a brief examination of the first three periods, each of the later periods will receive more extensive treatment.

II

In 1817, after 25 years of efforts to remove the stranglehold that inefficient currency markets had upon trade, the merchants of Montreal finally succeeded in opening the Bank of Montreal.[12] The merchants' key concern was a stable paper currency for commerce. The numbers of banks issuing notes had to be few in order to limit confusion, and they had to be perceived as sound. From the origins of banking, stability, meaning the prevention of bank failure, was essential.[13]

A centrally controlled branch system, modelled upon the ideas of Alexander Hamilton,[14] was adopted to limit the number of banks, promote stability through diversification effects,[15] and possibly make the task of regulation easier. Interestingly, Hamilton's ideas were sound for the US as the US success of the Bank of Montreal and other Canadian banks in the later nineteenth and early twentieth centuries demonstrated.[16] Confederation in 1867, which gave the federal government responsibility for banking, created one Canadian market and further encouraged national banks. A critical policy decision was made in 1866 when the Commerce was allowed to establish a branch system that would allow it to compete with the Bank of Montreal.[17] Size and stability would be encouraged, but there would be competition among Canadian banks.

The original focus on trade and relatively undeveloped capital markets required Canadian banks to engage in international activities from their origins.[18] By 1819, for example, in order to engage in the foreign exchange activities that trade financing required, the Bank of Montreal established ties with New York, Boston and London.[19] However, while international activities by domestic firms were encouraged, foreign controlled firms were not encouraged to enter this strategic sector of the economy. Legislation ensured control by British subjects.[20] Unlike other parts of the British Empire, Canada seems to have been relatively neglected by British banks. This may have been a key factor in allowing Canadian institutions to develop their international networks.[21]

Canada's nation builders left a lasting imprint on the Canadian banking industry. The 1871 Bank Act embodied the fundamental principles of the earlier bank charters and the charter of the first Bank of the United States,[22] but it also included a distinctively Canadian feature that must not be overlooked: the decennial review of the Bank Act. In order to ensure that financial legislation remained in touch with market realities, the government decided to review and to revise the Bank Act every ten years. The bankers realised that it was imperative to shape public policy in ways beneficial to the industry and they established the Canadian Bankers' Association (CBA) in 1891 to promote their common interests. While different strategic orientations among the banks may have diminished irritants to the spirit of co-operation, the creation of a permanent body could be expected to ensure that all conformed to rules limiting direct competition. The CBA held that it was 'unprofessional, improper and unsafe' to solicit clients of other banks.[23] Only a government fundamentally concerned with stability would support such anti-competitive measures.

At least as significant for the development of the Canadian banks was Prime Minister Macdonald's new National Policy of 1871, which encouraged commercial firms to establish operations in Canada behind high tariff walls. This policy combined with the discouragement of foreign financial MNEs created a tremendous opportunity for Canadian banks to service the internationalising firms who entered the Canadian market. National policy encouraging foreign direct investment allowed Canadian banks to develop a significant client base among MNEs. The slow development of US international banks, in part because of US regulations, served to amplify the opportunities created for Canadian banks.[24]

The Bank Act of 1900 ushered in an era which saw both domestic market consolidation and internationalisation by the major banks. Changes to the act encouraged loans to the natural resource sector, expansion to other areas of the Commonwealth, and simplified the approval process for mergers. Mergers now required only the approval of the Governor-in-Council on the recommendation of Treasury Board. A special Act of Parliament was no longer necessary. As E.P. Neufeld notes, this had a profound effect upon bank mergers:

> of the twenty-one banks that disappeared from the beginning of 1875 to the beginning of 1900, only four disappeared in mergers. . . . of the thirty-six banks that disappeared from 1900 to 1926, no less than twenty-seven disappeared in mergers.[25]

The role of mergers in promoting increasing industry concentration did not proceed without raising political concerns. When the Minister of Finance was questioned in Parliament about the frequent mergers following the changes of 1900, his response was that mergers were necessary to maintain the stability of the banking system. Many of the banks were no longer economically viable.[26] The failure of the Home Bank in 1923, the last Canadian bank failure until 1985, was further evidence that small local banks could not survive. Only the large and diversified branch banks could survive and protect depositors.

Table 1, which provides the relative size by total assets (both foreign and domestic) of the chartered banks, supports some interesting observations. The big three of 1960 had emerged by 1920, and possibly by 1910. While the Bank of Montreal may have been the leading bank in terms of prestige, the growth of the Royal and the Commerce had created formidable competitors, and the Bank of Nova Scotia was emerging from the pack by 1920.

The banks adjusted to new economic realities. The economic upheaval created by World War I both shifted the centre of global capital markets to New York and created tremendous trade opportunities. The size of the Canadian banks after the merger movement and the experience of all the Canadian banks in New York and London combined with international branch and agency networks, often better developed than their US counterparts, had endowed the banks with the capabilities to profit from the new opportunities. The banks seized the opportunities. In 1907, the chartered banks had 14 branches abroad, in 1918, 102, and by 1925 a peak of 175 that lasted until the 1960s.[27] The banks did not participate equally. In 1926, the Royal had 116 foreign branches and sub-agencies, the Nova Scotia 26, the Bank of Montreal 13, the CIBC 12, and the TD 2.[28] Different strategic roles were assigned to different foreign operations. All had representation in Great Britain and the US to maintain a presence in the major capital markets. However, retail and commercial markets of the Caribbean and Latin America provided the major growth opportunities, as they did for many other international banks.[29] Interestingly, the momentum for internationalisation declined

TABLE 1

RELATIVE SIZE OF INDIVIDUAL CHARTERED BANKS BY PERCENTAGE OF DOMESTIC AND FOREIGN ASSETS

Bank	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990
Bank of Montreal	28.3	22.4	18.4	19.0	18.1	18.1	25.6	26.4	23.6	20.7	19.5	18.1	15.0
Royal Bank of Canada		1.5	2.2	3.6	7.5	18.7	27.2	25.3	26.2	25.1	25.1	23.3	21.6
Canadian Bank of Commerce[a]	8.2	12.2	8.9	10.7	12.4	15.2	19.7	19 4	18 7	18.3	22.7	20.5	19.6
Imperial Bank of Canada[a]		2.5	3.9	4.4	4.9	4.3	4.2	5.0	5.7	6.0			
Bank of Nova Scotia	N.A.	2.2	3.4	4.5	4.4	7.8	8.4	8.8	8.9	11.8	13.6	16.0	15.0
Bank of Toronto[b]	4.8	3.5	4 7	4.0	4.0	3.2	3.9	4.5	5.2	10.8	12.0	12.5	11.5
Dominion Bank[b]		3.1	4.8	4.8	5.1	4.6	4.5	4.1	4.9				
Banque Provinciale du Canada	2.6	0.9	1.1	0.6	0.8	1.4	1.6	1.5	1.8	2.2	2.2		
Banque Canadienne Nationale		0 7	1.1	2.0	1.9	2.4	4.6	4.3	4.7	4.6	4 3	6.1	6.2
Other	56.1	51.0	51.4	46.4	40.9	24.3	0.2	0.6	0.4	0.5	0.6	3.4	11.1
Number in Other Category	15	27	29	27	19	9	2	1	1	1	2	5	60
Total %	100	100	100	100	100	100	100	100	100	100	100	100	100
Two largest %	36 5	34.6	27.3	29.7	30.5	36.8	52.8	50.7	49.8	45.8	47.8	43.8	41.3
Three largest %		38.1	32.1	34.5	38.0	52.0	72.5	71.1	68.5	64.1	67.3	61.9	56.3
Five largest %		43.7	40.7	43.4	48.0	64.4	85.5	83.4	83 1	86.7	92.9	90.5	82.8

Notes: As at 31 December in each year, except for 1980 and 1990, which are as at 31 October.
a. Canadian Imperial Bank of Commerce (CIBC) after 1960.
b. Toronto-Dominion Bank (TD) after 1955.

Sources: *Canada Gazette*, 'Monthly Returns of the Chartered Bank', C.A. Curtis, *Statistics of Banking: Statistical Contributions to Canadian Economic History*, Vol I (Toronto, 1931); E.P. Neufeld, *The Financial System of Canada* (Toronto, 1972), p. 99.

in the mid-1920s.[30] Rather than fighting for growth in the home markets and increase domestic rivalry, the Canadian banks looked to foreign markets where they could capitalise upon their strengths in branch banking.[31]

While 1929 did not see a revision to the Bank Act, it was an important year in economic history. Although the Canadian banks survived the Great Depression without a failure, the economic climate had a major impact. The banks became increasingly liquid, as there were few opportunities for loan (asset) growth, even as deposits grew. As a result, attention shifted to controllable costs and a co-operative rationalisation of branch networks to maintain financial soundness.[32] Economic necessity altered the wisdom of excessive branching which had been a viable non-price competitive service strategy in this regulated industry. The growth of deposits not only reduced bank profitability, but exposed the banks to public criticism. Why did they refuse to lend their money?

III

The revision of the Bank Act in 1934 is as interesting for the climate in which it took place as for the importance of actual amendments. The banks were subjected to far greater social criticism, best exemplified by the call for 'nationalisation' raised by Social Credit. The threat of Social Credit in Alberta and some aspects of the New Deal in the US demonstrated it was imperative for corporations to realise the importance of an enterprise strategy.[33] Business could no longer assume social legitimacy as a given.[34]

Despite the best efforts of the banks to assure the public and the government that the system was working, the government created a central bank, the Bank of Canada, which commenced operations on 11 March 1935.[35] While most banks did not find changes in the 1934 Act especially restrictive, except for those related to the new central bank (such as new reserve requirements and withdrawal of note issuing privileges), the Bank of Montreal would no longer fulfil many of the functions of a central bank.[36] The bankers did a good job of convincing legislators that the cautious approach taken by Canadian bankers had lessened the effects of the Depression. Canadian bankers had not lent funds to support reckless speculation, and consequently Canadian banks were not failing. On the other hand, bank failures in the US called the whole financial system into question. The Canadian system, on the other hand, was able to maintain orderly, if lethargic markets.[37]

During World War II the banks engaged in public service, as they had in World War I. The government's efforts to channel resources to the war effort led to renewed co-operation among the banks. One aspect of this was the further rationalisation of the branch system which freed up labour for other sectors of the economy.[38] Another aspect was the personnel problems that led both to an increased focus upon the improvement of systems and to recognition of the value of women as employees.[39] Lastly, the condition of full employment and scarce consumer goods meant a significant build-up of deposits. The banks would emerge from the war years deposit-heavy.

The post-war world offered tremendous opportunities for a Canadian system strengthened by the war.[40] War-ravaged countries needed North American exports, and developing countries needed advice to develop their infrastructures and resources. Both were familiar areas to Canadian bankers. The bankers expanded their advantage by convincing regulators to amend the Bank Act to expand the scope of domestic operations and to leave international untouched. Proposals preceding the 1944 Bank Act featured one that would allow banks to charge higher interest than previously allowed to encourage them to enter the small lending field. While the proposal was defeated, it was interesting because the government could see the benefits of the banks expanding their powers into a new area where consumers were being charged considerably more by specialised small loan companies. The revisions also broadened the public base of the banks by reducing the par value of shares from $100 to $10 and by lowering the requirements for one quarter of the directors. The Bank Act revisions of 1954 allowed the banks to enter new fields in both corporate and personal lending. These were mortgage loans under the National Housing Act; chattel loans, that allowed entry into the market for individual automobile and household loans; and loans made against the security of hydrocarbons in the ground. The banks were to play a key role in financing another natural resource.

New opportunities in international markets opened up and were taken, especially by the Royal and the Nova Scotia. The Royal protected and enhanced its leadership position by paying increasing attention to the US and to other international operations.[41] The Nova Scotia is especially interesting at this time because it took advantage of international opportunities to develop a segment that was underdeveloped in Canada: large corporate clients.[42] F.W. Nicks (CEO 1958–72), went 'door knocking' in Great Britain, Germany, Greece, Beirut, Japan and the US to secure the large clients that the bank lacked in Canada.[43] Generally the establishment of an office to maintain a continuing presence followed. This intensification of efforts in the corporate sector marks a new era internationalisation and a significant growth vector for the Nova Scotia (see Table 1). However, experience gained from MNEs in the protected Canadian market was key to the development of the knowledge needed to compete in these markets. In addition, the reputation for financial soundness due at least in part to Canadian regulation was essential for securing the necessary foreign funds at a reasonable cost.

The Nova Scotia benefitted further from its American experience as it copied a consumer lending programme from the Bank of America. The newly opened markets provided opportunities in the retail sector which the bank quickly pursued. By the end of the period, the Nova Scotia had a far stronger international presence and a leading presence in the personal loan market. The development of the personal loan market is especially interesting for the light it sheds upon regulation of product markets and product innovation. In order to enter the personal loan business, the banks had to escape the statutory six per cent ceiling on what it could charge. Even though the banks could lend to small borrowers at a lower rate than the specialist consumer lending companies, there was no chance that the government would remove the ceiling. However, by linking the loan repayment to a special bank account the banks could effectively charge borrowers approximately 11 per cent.[44] The government did not object to these moves, which strengthened the domestic base of the banks.

In 1955, the merger of the Dominion Bank with the Bank of Toronto created a powerful bank based in central Ontario, the Toronto-Dominion Bank. Interestingly, the TD, the last of the Big Five to emerge, is now regarded by many as one of the best managed institutions in the world.[45] In 1960, the current pattern of the Big Five of Canadian banking was clearly established when the Canadian Imperial Bank of Commerce was created by the union of the Imperial Bank with the far larger Canadian Bank of Commerce.

The era is also interesting for a decline in relations between the banks and the government. One issue was 'near banks'. The banks believed that they were exposed to unfair competition for deposits from trust companies and other 'near banks' who were regulated differently and often provincially. The importance of deposit products and different levels of government regulation are both made manifest. The following remark from a recent textbook prepared for Canadian bankers by their educational institute is revealing in its approach to the Bank Act and the 1960s: 'The Bank Act, once so highly valued, had turned out to be a financial straightjacket for those it was designed to help'.[46]

Another critical issue was the spectre of US control of the Canadian financial system.[47] Foreign banks had been allowed to operate in

Canada, although it seems fairly clear from the fact that only one small Dutch owned enterprise was established that official policy did not encourage entry. The acquisition of the Mercantile by the giant First National City Bank of New York (Citibank) in 1963 raised the issue of foreign ownership in a dramatic way.

IV

The Federal Government reacted in the 1967 revision to the Bank Act to both the ownership and 'near banks' issues. New ownership restrictions were established which would prevent significant foreign expansion in the banking sector. From 1967 on, ownership of voting shares was limited to ten per cent for an individual and his associates, and non-resident ownership was limited to 25 per cent.[48] The unfair competition from near banks was alleviated with the 1967 Bank Act revision, which, following the recommendations of the Porter Commission, 'loosened the straitjackets' on banks. The encouragement to increased product diversification was supported by the effective removal of interest rate ceilings on bank loans.[49] The dominance of the chartered banks in domestic markets was secure again.

Between 1965 and 1980, Canadian banks acquired in whole or in part more than 160 primarily foreign banks and companies.[50] But perhaps, even more important was the change from retail to wholesale bankers. The emergence of the Canadian banks in the new world of international lending has been well documented in Pancras Nagy's *The International Business of Canadian Banks*.[51] Table 2 provides data on the size and growth of all the foreign assets of all Canadian banks.[52]

The rapid growth of foreign assets made possible by extensive use of interbank markets raised the share of foreign assets from roughly 20 per cent in 1965 to almost 40 per cent by 1980.[53] Nonetheless, the market share of assets in foreign currencies held by Canadian banks fell from a high of 15 per cent in 1960 to roughly six per cent by 1980.[54]

Part of the reason for the shift in market share is the change in the structure of international banking. Unlike the earlier internationalisation of largely retail banking in the Caribbean and Latin America, which vaulted the Canadian banks into the ranks of the world's largest, the late 1960s and 1970s saw tremendous international growth in wholesale banking on the part of banks everywhere.[55] The Canadian banks were growing rapidly, but they were declining in relative size to many banks from the US, Japan, Europe and OPEC countries. While the reputation for stability allowed the Canadian banks to obtain funds at competitive rates, they fell behind more aggressive competitors.[56] Innovative US

TABLE 2

GROWTH OF FOREIGN ASSETS

Year	All Foreign Currencies ($US Billion)	Growth (%)
1960	2.74	
1967	5.99	
1968	7.28	22
1969	10.8	25
1970	13.5	25
1971	14.5	7
1972	16.7	15
1973	23.4	40
1974	28.8	23
1975	30.5	6
1976	34.5	13
1977	43.6	26
1978	56.5	30
1979	70.1	24
1980	92.0	31

Source: P. Nagy, *The International Business of Canadian Banks* (Montreal, 1983), p. 132

and UK commercial and investment banks and chief financial officers (CFOs) of MNEs, such as IBM, Kodak, GE, and GM, were leading the way in developing sophisticated new products to manage international cash positions and interest and foreign exchange risk.[57] The volatility of markets increasingly made these products important. The relatively small number of MNEs headquartered in Canada limited the opportunities of Canadian banks to gain experience with these new products.[58]

The development of the transnational, unregulated Euromarkets in this era fundamentally changed international banking. Two key features of these markets merit comment. First, they were, and are, essentially electronic markets. The Euromarkets do not exist in one place, but rather are 'transnational' markets made possible by instantaneous telecommunication linkages. The linkages between different domestic capital markets created by the Euromarkets fundamentally altered the ability of different domestic regulators to maintain distinct national capital markets. Moreover, improved information flows fundamentally changed the transactions costs of the industry.[59] The ability of non-financial firms to shop on electronic markets also lessened the importance of some bank services to CFOs. Changes to transactions costs made it increasingly attractive to CFOs to go directly to markets for funds. This shift from intermediated to direct finance is known to bankers as 'disintermediation'. Secondly, because the markets had no regulations, there were no limitations upon what services or products any competitor could provide. This created opportunities for product line diversification far beyond those supported by the 1967 Bank Act which maintained the traditional 'four pillars' of chartered banks, trust companies, investment dealers and insurance companies. Deregulation offered broader competitive scope than reregulation and exposed firms to new competitors with competitive advantages based upon their experience in different sectors of the financial services industry.

Another incentive to international activity was domestic regulation which weakened bank profitability: the Winnipeg Agreement of 1972 and the Anti-Inflation Board legislation of 1976.[60] Limitations upon domestic prices encouraged the banks to focus upon international operations to improve profits. It should be noted, however, that this was general legislation and was not targeting the banks, even though it did have negative effects upon the banks. Interestingly, these rules can be seen as part of an era that is marked by a downward spiral in business–government relations. The developing gap is quite clear in the annual reports of the Bank of Nova Scotia from 1968 on. The bank became disenchanted with the government's policies discouraging foreign investment and the inability to control the deficit. At the heart of the issue is the message that the country is not being run in a very business-like fashion. This is a new tone to relations between the banks and the government.

The period is an interesting one for the fortunes of the banks. Despite the tremendous asset growth resulting from renewed internationalisation, the banks were declining in size relative to other global competitors. Stability and retail banking which were key strengths of Canadian banks no longer provided significant competitive advantages. In fact, conflict was inherent between pioneering new products of unknown risks and maintaining a reputation for financial soundness. Canadian banks followed the more innovative financial engineers. Moreover, globalisation of capital markets meant that it was no longer possible to protect Canadian banks from foreign competitors. Canadian MNEs increasingly were turning to foreign competitors on the Euromarkets.[61] This further limited opportunities for Canadian banks to gain experience with these new instruments. At the same time, less positive attitudes towards inward foreign direct investment restricted relations with MNEs.

The 1980s witnessed fundamental changes to the two key tenets of public policy: domestic control and stability. The 1980 Bank Act revision allowed foreign banks into Canada and the problems with LDC debt raised serious questions about the stability of Canadian banks. The response of regulators to the new world of financial services competition created by the deregulated Euromarkets must be seen as a valiant effort to balance the sometimes conflicting goals of stability and maintaining globally competitive institutions.

V

The 1980 Bank Act, which allowed the entry of foreign banks into Canada, recognised the impossibility of maintaining the protected Canadian market. The changes were consistent with the direction of previous public policy, as K.J. Friedman has argued.[62] He holds that changes in capital markets were such that by 1980 it was important that foreigners be allowed into Canada in order to create a level playing field for Canadian banks *vis-à-vis* foreign banks operating under different forms in Canada. The development of international markets had created conditions in which the Canadian banks faced unfair competition for Canadian business from offshore competitors. It should also be added, that the new foreign banks were restricted to eight percent of the total market. Since the change was an effort to maintain, or even salvage, the status quo more than to unleash unbridled competition, it was not surprising that most banks supported the entry of foreign banks. The result of new bank entries has altered the landscape, but the five majors are still clearly dominant.

A second critical response that brought Canadian regulation into line with the new realities was the 'little bang' of 1987, as Canadian deregulation was known.[63] It marked the beginning of the end of the classic Canadian four pillars approach and the banks were the institutions in the best position to capitalise upon the new opportunities.[64] The ensuing expansion of the chartered banks into new areas is consistent with previous policy, but the entry into the underwriting of securities marked a major change. By the end of the decade, with the exception of the TD, all the banks had acquired investment dealers in order to participate in the underwriting of equities. Banks could now provide long, medium and short term capital to firms. The positive effects on income can be seen in Table 3.

These expanded powers were fundamental to restoring competitive strength.[65] The reason for this is that increased competition had lowered the profitability of the core lending business at a time when banks needed to be profitable in order to be able to repair their capital base to restore their previous reputation for stability. One measure of stability is the ratio of total loans to shareholder equity since the lower the ratio,

TABLE 3

FEE-BASED INCOME AS A PERCENTAGE OF INCOME

Bank	1983	1986	1989	change 1983–86	change 1986–89	change 1986–89
BM	20.6	28.2	31.1	36.9	10.0	50.6
BNS	18.0	21.0	29.1	16.5	38.9	61.7
CIBC	21.4	26.0	29.0	22.0	11.5	36.0
Royal	23.2	24.7	29.8	6.4	20.4	28.2
TD	19.4	23.1	28.7	19.2	24.4	48.2

Sources: Annual Reports of the banks.

the more capital the bank has to offset loan losses.[66] Table 4 demonstrates the dramatic increase in this ratio, or 'gearing', as bankers say, during the 1970s.

The fact that these ratios were higher than comparable US institutions raised concerns among analysts and regulators.[67] They may also have raised the concerns of some depositors. In 1982, during the Mexican debt crisis, the Canadian banks found themselves paying a premium to attract funds on the Euromarkets because of concerns over their solvency.[68] The heady days of go-go banking on the Euromarkets had encouraged the banks to stray from their traditional strengths and compete in new areas. That problems resulted should not be surprising.

The problems faced by the Canadian banks in international markets were far from unique. The fall of traditional geographic and product market barriers ushered in an era of increased competition in international commercial banking. The falling margins on loans tempted most commercial banks to pursue a growth strategy driven by volume in order to maintain their profitability. However, pursuit of growth for growth's sake can encourage banks to take on riskier loans at less than the appropriate risk premium. The riskiness of new products served to amplify problems stemming from the basic nature of financial intermediation. Falling creditworthiness further encouraged disintermediation as MNEs found that they were blessed with higher credit ratings than their banks. GE and GM could raise funds more cheaply by going directly to markets. Eventually, their financial expertise also led them to become competitors in the financial services industry.

International problem loans were not the only source for concerns. The failure of two small western banks, the Northland and the Canadian Commercial Bank in 1985, raised concerns about the stability of Canadian financial markets. While the failures were small, regional institutions, they were the first since 1923. In response to the concerns,

TABLE 4

TOTAL ASSETS/SHAREHOLDER'S EQUITY

Year	Average 1971–72	1980
All Canadian Banks	32	42
Royal Bank	33	37
CIBC	28	50
Bank of Montreal	32	39
Bank of Nova Scotia	29	39
TD	34	35

Source: P. Nagy, *The International Business of Canadian Banks* (Montreal, 1983), p. 132.

Ottawa formed a Royal Commission under Willard Estey to ensure that there were no further failures. In addition, regulators paid even stricter attention to the capital ratios of the Big Five. Tension between the banks and regulators climaxed in 1985, when the regulators refused to allow the banks to include their loan loss reserves against LDC debt in their capital adequacy calculations in the manner that US banks did.[69] Canadian banks would be held to stricter standards to avoid a repeat of incidents in 1982 and 1985. Without such strict standards, the 'little bang' would have been an invitation to disaster.

In the early 1980s, in response to the declining profitability on the core loan business, banks increased fee income. They also expanded geographically and in product line to compete. The strategy included acquisition of securities dealers. It seemed that the goal was to copy the universal banks of Germany, such as the Deutschebank. By the end of the decade, the banks clearly recognised that they were not competitive in all markets and we see a general retrenchment to North America and to non-interest, or fee-based, income.[70] (See Tables 3 and 5.) It must be emphasized that the 'little bang' had removed regulatory barriers to such strategies. In 1990, the realities of globalisation and the deregulated markets has produced far more strategic homogeneity among the major banks. It has also produced increased competition among them. The response of the Royal Bank to the efforts of the Bank of Montreal to gain share by cutting the prime rate is indicative of a new domestic rivalry.[71]

The retrenchment to North America and retail banking is reminiscent of the earlier pattern of internationalisation in the 1920s. However, now the strategic focus is on the US rather than upon the Caribbean and Latin America. The strategic focus on the US is quite clear in Table 5

TABLE 5

GEOGRAPHIC BREAKDOWN OF THE ASSET PORTFOLIOS

Bank	1983 % Total Earning Assets	1986 % Total Earning Assets	1989 % Total Earning Assets	Change 1983–86	Change 1986–89	Change 1983–89
BM						
Canada	67.2	51.6	61.3	–23.3	18.9	–8.8
United States	10.4	26.7	28.4	157.3	6.4	173.7
Total North America	77.6	78.3	89.7	0.9	14.6	15.6
Europe	8.2	8.7	3.7	5.9	–57.2	–54.7
Asia	6.6	6.8	3.0	3.7	–55.9	–54.3
Latin America and Caribbean	7.2	6.0	3.5	–16.2	42.4	–51.7
BNS						
Canada	49.0	51.5	60.6	5.1	17.7	23.7
United States	14.0	18.0	18.8	28.6	4.4	34.2
Total North America	63.0	69.5	79.4	10.3	14.3	26.0
Europe	17.8	11.7	9.0	–34.3	–23.1	–49.4
Asia	6.6	7.4	5.6	12.1	–24.3	–15.1
Latin America and Caribbean	11.6	10.9	5.8	–6.0	–46.7	–49.9
CIBC						
Canada	70.2	67.3	72.5	–4.0	7.7	3.4
United States	9.8	13.8	10.0	41.1	–27.2	2.8
Total North America	80.0	81.1	82.5	1.5	1.8	3.3
Europe	7.6	7.7	6.5	0.3	–15.4	–15.1
Asia	3.4	4.1	4.7	20.1	15.1	38.2
Latin America and Caribbean	5.0	4.9	2.9	–2.0	–42.0	–43.2
Royal						
Canada	62.7	61.9	78.7	–1.3	27.2	25.6
United States	8.7	10.3	7.1	18.3	–30.6	–17.9
Total North America	71.4	72.2	85.8	1.1	19.0	20.3
Europe	15.9	13.8	7.4	–13.4	46.3	53.5
Asia	4.3	7.2	3.6	68.5	–49.8	–15.5
Latin America and Caribbean	8.4	7.6	5.7	–10.2	–24.4	–32.1
TD						
Canada	66.5	68.2	79.1	2.5	16.1	18.9
United States	11.6	14.7	12.6	26.6	–14.3	8.5
Total North America	78.1	82.9	91.7	6.1	10.7	17.4
Europe	9.7	4.3	2.6	–55.8	–39.8	–73.4
Asia	5.7	3.9	2.0	–30.7	–48.2	–64.1
Latin America and Caribbean	6.0	5.2	0.3	–13.6	–94.5	–95.3

Sources: Annual Reports of the banks.

for the Bank of Montreal, especially since the acquisition of the Harris Bank in Chicago, and the Bank of Nova Scotia. The Royal and the TD are clearly increasing their activities in Canada, but evidence for the US is not as clear. However, the Royal and the TD have both announced strategic intentions at their 1991 annual meetings to expand significantly upon their current US base.[72] The CIBC had the most heavily weighted Canadian asset portfolio and is increasing its efforts to build an international network. Despite the lack of increase in the US, the CIBC has also announced that it is seeking to expand its business in the US via acquisitions in the near future.[73] The US market will play a major role in the future for the Canadian majors.

Interestingly, the combination of stability and the ability to manage extensive branch networks are the source of competitive strengths in the more fragmented and troubled US market. Caution demanded by regulators and exercised by bankers from the mid-1980s on means that the banks are now well positioned to compete with more troubled US banks.[74] Just as happened in the 1920s, the reputation for stability and branch management skills will provide Canadian banks with significant competitive advantages in US markets plagued by bank failures. In addition, the increased economic activity which is expected to arise from the Free Trade Agreement will create opportunities for the banks to introduce new US clients into Canada.

The current competitiveness of the Canadian banks *vis-à-vis* their US counterparts highlights a key problem in the relationship between regulating for stability and global competitiveness. Regulating for stability meant limiting growth in the 1980s. In so far as international competitors were under looser regulatory regimes, the Canadian MNBs were at a disadvantage. However, markets caught up to the Canadian regulators. The credit crunch of the 1990s in Japan and the US has placed the sounder Canadian banks at a competitive advantage.[75] While the regulatory policy of stability has been relatively constant, its source as a competitive advantage has varied with market environments. However, earlier efforts at deregulation in Canada clearly places Canadian banks at an advantage *vis-à-vis* their US counterparts.[76]

The advantages flow from two different aspects of regulation. First, Canadian banks are perceived as sound banks. While US banks need to restrict credit in order to conform with the new Bank of International Settlements guidelines on capital adequacy, Canadian banks have a capital base that will support growth. US clients are coming to the Canadian banks. Secondly, the 'little bang' means that Canadian banks are well positioned to participate in the new field of intermediation – market intermediation, rather than financial intermediation. The entry into the securities fields allows Canadian banks to service firms who seek to move from intermediated to direct finance, rather than suffer from disintermediation. This capability is particularly relevant in the US where investment banks, i.e. firms active in direct financing, have been considerably more profitable than commercial banks.[77] The recent decision by the Federal Reserve to allow subsidiaries of the Royal and the CIBC to enter the securities fields is of fundamental importance. The Fed has made it clear that these Canadian banks are as sound as J.P. Morgan, the first US bank allowed to enter the field.[78] Canadian banks have been recognised as financial services firms while virtually all US commercial banks remain limited to commercial banking in their competitive scope.

The opportunities to bring clients into Canada will not be limited to the US. The TD, which has limited both its national and international expansion, found that its lean operations were the model for operations in the 1980S and 1990s.[79] Yet the core of its successful Japanese strategy is based upon superior knowledge of the Canadian market, not competitiveness in the Japanese market. Henry Schindele, vice-president and regional treasurer for Asia, gave the following explanation as to why the TD was the top profit maker among 83 foreign banks in Japan for fiscal 1990:

> This was no fluke. If you go back to 1982, our strategy was entirely different from most foreign banks at the time. Other banks were lending at very low margins. We felt that Japan was a capital exporting country and that it would be like bringing coals to Newcastle if we were to try to lend money to Japanese companies. Our strategy was to assist the outflow of capital from Japan to Canada and other countries.[80]

As Nicks of the Nova Scotia demonstrated in the 1950s, successful Canadian banks seek to capture flows into Canada to exploit the advantages of their domestic market dominance.

VI

Public policy, which, especially since 1890, has promoted large stable Canadian banks as the dominant financial players in Canada, has been a source of competitive advantage for Canadian banks. When markets place a premium upon stability, the advantage is considerable. The reputation for stability and the ability to manage extensive branch networks will again be advantages as the Canadian banks increase their presence in the US markets. In many ways, this is a replay of the earlier wave of internationalisation in the 1920s which helped Canadian banks enter the rankings of global competitors.

While the role of the entrepreneurial spirit of Canadian bankers in internationalisation is well attested to in the histories of the individual banks,[81] one must still ask the question: after the consolidation of the early twentieth century, how else could the banks grow without competing with one another? Internationalisation was consistent with the early focus on trade, but it further served to preserve market stability. It also improved the financial stability of individual banks by promoting loan portfolio diversification. The individual, entrepreneurial acts tied to specific market conditions must be seen against the background of the constant direction of public policy.

However, the concern for stability can hinder competitiveness by slowing product innovation associated with unknown risks or limiting growth to ensure capital adequacy. With the exception of the late 1970s and early 1980s, policies to promote stability have been constant, but the degree to which they have conferred competitive advantage varies with the climates of financial markets. While trying to promote global competitiveness of Canadian financial institutions, public policy has always had a fundamental concern with maintaining a reputation for stability.

The tremendous changes in financial markets in the 1960s and 1970s resulted in sharply declining standings in asset size rankings for the Canadian banks. The development of unregulated Euromarkets and the associated growth in wholesale banking significantly lowered entry barriers into international banking for new entrants. Changes in international capital flows related to the tremendous economic growth of Japan and the OPEC cartel further spurred new entrants. At the same time, these new markets spurred product innovation that increased the importance of direct financial instruments offered by investment banks over the indirect instruments which were the core offering of commercial banks. In this new environment, public policy frameworks different from the Canadian federal one may have better fostered competitive advantage. The universal banks of Europe, especially of France, Germany and Switzerland, and the US investment banks[82] merit study in this context.

The key to the earlier rise to prominence of Canadian banks was the protected domestic market which allowed them to develop the skills and products necessary to compete in international markets. Globalisation and deregulation of capital markets both altered the demand for 'traditional' products and lessened the ability of public policy to protect the domestic market. The banks increasingly turned to the more protected retail banking sector.[83] At the same time, Canadian bankers successfully persuaded regulators to expand their powers *vis-à-vis* other financial services sectors to allow increased revenues from domestic sources and to secure a base to develop the skills demanded in the new international environment. Once again, policies affecting the domestic base have been critical for competitiveness. As the Canadian banks penetrate North American markets and become major North American players, they should pause to give some thanks to regulators who have been key players in establishing the brand image of Canadian banks as stable, well-managed and international.

NOTES

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1 L G Franko, 'Global Corporate Competition· Who's Winning, Who's Losing and the R&D Factor as One Reason Why', *Strategic Management Journal*, Vol 10 (1989). Of the other top 12, 6 were from the US and 3 from Britain Franko measures size by 'percentage of sales', by which he means assets (loans) It is interesting that assets, not deposits, became the traditional ranking measure for banking in banking journals. This may have changed this year, when *Euromoney*, a leading financial publication, ranked by shareholders' equity. See 'The Euromoney Five Hundred', *Euromoney*, June 1991

2. This share far exceeded the role of Canadian MNEs in global markets. See, for example, P Nagy, *The International Business of Canadian Banks*, (Montreal, 1983), pp. 3–4

3. The Economic Council of Canada, *A New Frontier Globalization and Canada's Financial Markets* (Ottawa, 1989), p 20

4. A fuller discussion of these issues is available in J.L. Darroch, 'Strategic Management and Multinational Banking The Case of the Canadian Banks' (unpublished Ph D. thesis, York University, 1989). The thesis employs the annual reports, public statements by bankers and previous studies of the banks to develop case histories of the individual banks. The historical references to the banks draws upon the following bank histories. M. Denison, *Canada's First Bank. A History of the Bank of Montreal* (Toronto, 1966), J. Schull and J.D Gibson, *The Scotiabank Story· A History of The Bank of Nova Scotia* (Toronto, 1982), C H Ince, *The Royal Bank of Canada· A Chronology, 1869–1969* (No place of publication, no date), V Ross, *A History of the Canadian Bank of Commerce with an Account of the Other Banks which now form part of its Organization* (Toronto, 1920 and 1922), A. St. L. Trigge, *A History of the Canadian Bank of Commerce with an Account of the Other Banks which now form part of its Organization*, Vol.3 (Toronto, 1934), and J. Schull, *100 Years of Banking A History of The Toronto-Dominion Bank* (Toronto, 1958)

5. J.M. Gray and H.P Gray, 'The Multinational Bank· A Financial MNC?', *Journal of Banking and Finance*, Vol. 5 (1981)

6 C P. Kindleberger, 'International Banks as Leaders or Followers in International Business', *Journal of Banking and Finance*, Vol. 7 (1983)

7 See the discussion of the movement towards concentration in E P Neufeld, *The Financial System of Canada· Its Growth and Development* (Toronto, 1972), pp. 97–101.

8 See G. Jones, 'Competitive Advantages in British Multinational Banking since 1890', in G. Jones (ed.), *Banks as Multinationals* (1990), pp 30-61

9. See J.L. Darroch, 'The Changing Face of International Banking: Institutional Transformation and Innovation in Product Design', *Banking & Finance Law Review*, Vol.4 (1990).
10. This is why 1871 is chosen as the demarcation point rather than the 1867 Confederation date.
11. See Neufeld, *Financial System*, p. 111
12. The difficulties in obtaining a charter meant that the Bank of Montreal came into existence as an unchartered corporation with articles of association published in the Montreal Herald in the latter part of May 1817. The bank was not incorporated until 1822. See A. Shortt, *Adam Shortt's History of Canadian Currency and Banking, 1600–1800* (Toronto, 1986) p 26 and p. 78.
13. Neufeld, *Financial System*, p. 74
14. See Shortt, *Adam Shortt's History*, pp. 9–27 and Denison, *Canada's First Bank*, Vol. I, Ch.3. US influence was not limited to ideas. It also had a practical dimension. The bank could not have opened without assistance from the US. Fifty per cent of the original stock issue was sold in New York and Henry B Stone, the only original employee with any practical banking experience, was on loan to the bank from friends in Boston Perhaps, these influences fostered a more international perspective
15. The desire for improved stability of earnings made possible through the portfolio effects that can be captured via international expansion has been given as a reason for internationalisation. For example, see A.R. Rugman, *International Diversification and Multinational Enterprise* (Lexington, MA, 1979); S.J. Khoury, *Dynamics of International Banking* (New York, 1980); L.S. Goodman, 'Bank Lending to Non-Opec LDCs: Are Risks Diversifiable?', *Federal Reserve Bank of New York Quarterly Review*, Summer 1981, Gray and Gray, 'Multinational Bank'
16 See M. Wilkins, 'Banks over Borders Some Evidence from their pre–1914 History', in G. Jones (ed.), *Banks as Multinationals* (1990), pp. 217–47.
17. In part the need for a bank in Upper Canada was created by the conservative policies of King and the Bank of Montreal in this area. It was been asserted that the Bank of Montreal channelled deposits raised in 'western' Canada to Montreal and the New York markets See Ross, *History of the Canadian Bank of Commerce*, Vol. 2, pp. 18 *et seq* Ross's fine work provides much of the details synthesised in the following sections.
18 Neufeld, *Financial System*, p. 123.
19 On the early activities of the Canadian banks in the US, see 'Banking Services' Ch. 13 in M. Wilkins, *The History of Foreign Investment in the United States to 1914* (Cambridge, MA, 1989), pp. 453–89
20. See Denison, *Canada's First Bank*, Vol. I, Ch.7, pp. 143–4.
21. See Jones, 'Banks as Multinationals', in G. Jones (ed.), *Banks as Multinationals* (1990), p. 32.
22. See A B. Jamieson, *Chartered Banking in Canada* (Toronto, 1953), p 20
23. See Schull and Gibson, *Scotiabank*, pp. 84–7
24. See Wilkins, 'Banks over Border', pp. 222–5.
25. Neufeld, *Financial System*, p 97.
26. Ibid., p. 98
27. Ibid., p. 125
28. Unfortunately, the *Canada Year Book* is inconsistent and does not provide the branch breakdown for 1925. It should also be noted that Newfoundland is excluded from the number of foreign branches
29 See Jones, 'Banks as Multinationals'
30. See Neufeld, *Financial System*, p. 138 The timing is interesting. British banks had expanded rapidly prior to the War when their British nationality and access to sterling conferred competitive advantage, but saw their growth slow in the inter-war period. See Jones, 'Competitive Advantages', pp. 42–4.
31. See D J Baum, *The Banks of Canada in the Commonwealth Caribbean Economic Nationalism and Multinational Enterprises of a Medium Power* (New York, 1974)
32 See, for example, Denison, *Canada's First Bank*, Vol 2, p. 380

33. See for example the *65th (1934) Annual Report of The Royal Bank of Canada*, pp. 6–8, or the *74th Annual Report of The Royal Bank of Canada*, pp. 7–9.
34. See the discussion in Denison, *Canada's First Bank*, p. 384, Schull and Gibson, *Scotiabank*, pp. 165–7, and Jamieson, *Chartered Banking*, pp.130–31
35. See Jamieson, *Chartered Banking*, pp 100–103.
36. See Denison, *Canada's First Bank*, Vol 2, p. 388.
37. See Jamieson, *Chartered Banking*, pp. 108–9.
38. See Schull and Gibson, *Scotiabank*, pp 173–4 and Neufeld, *Financial System*, pp 101–2.
39. See *74th (1943) Annual Report of The Royal Bank of Canada*.
40. See *76th (1945) Annual Report of The Royal Bank of Canada*, p 7.
41. Discussion of the importance of US risk capital to Canadian development is a recurring theme in the annual reports of the later 1940s.
42. See Schull and Gibson, *Scotiabank*, pp. 217–8 and pp 242–9.
43. See the comments in ibid , pp. 341–2.
44. Ibid., p. 207.
45. See, for example, S.I. Davis, *Excellence in Banking* (1985) and idem, 'Leader of the Pack', *Euromoney*, Dec 1990.
46. J (M E.) Capes and T.E Raynor, *Orientation to Banking* (Scarborough, 1986), p. 56.
47. J. Fayerweather, *The Mercantile Bank Affair A Case Study of Canadian Nationalism and a Multinational Firm* (New York, 1974).
48. See Neufeld, *Financial System*, pp. 100–101
49. Ibid., p 132
50. Nagy, *International Business*, p. 5.
51. See also E W Clendenning, *The Euro-Currency Markets and the International Activities of Canadian Banks* (Ottawa, 1977)
52. Nagy, *International Business*, pp. 26–7.
53. Ibid , p. 29. This topic is also developed in S.M Cechetto, 'A Comparative Analysis of the Internationalization of United States and Canadian Banks' (Unpublished M A thesis, Carleton University, 1979).
54. See Nagy, *International Business*, Figure 6, p. 31.
55. See Jones, 'Banks as Multinationals', p.5 and T. Huertas, 'US Multinational Banking History and Prospects', in G. Jones (ed.), *Banks as Multinationals* (1990).
56. See Economic Council of Canada, *New Frontier*, pp. 20–23
57. At the extreme, MNCs no longer needed financial intermediaries. See A Mottur, 'Making the Decision to Diversify into Financial Services', *Journal of Business Strategy*, Vol 8 (1987)
58. These products were not in wide use even in the late 1980s See B. Kalymon, *Global Innovation and the Impact on Canada's Financial Markets*. (Toronto, 1989)
59. See Huertas, 'US multinational banking' and B. Scott-Quinn, 'US Investment Banks as Multinationals', in G Jones (ed.), *Banks as Multinationals* (1990)
60. H.G Grubel argues that a significant factor in the growth of foreign operations of the Canadian banks was the desire to escape the effects of domestic regulation and taxation See H.G Grubel, 'The New International Banking', *Banca Nazionale del Lavoro Quarterly Review*, Sept. 1983.
61. Economic Council of Canada, *New Frontier*, p 20.
62. See K J Friedman, 'The 1980 Canadian Banks and Banking Law Review Act: Competitive Stimulus of Protectionist Barrier?', *Law and Policy in International Business*, Vol 13 (1981)
63. See B McGoldrick, 'Little Bang Brings Down Barriers', *Euromoney*, Nov 1988, pp 159–62.
64. See H.D. Whyte, 'Banks Likely to Rule over Toppled Financial Pillars', *Financial Post*, 1 Oct 1990, p. 4.
65. The declining competitiveness of Canadian financial institutions in the newer products is well documented in Economic Council of Canada, *New Frontier*
66. While it is difficult to translate the new Bank of International Settlements regulation

that bank capital must equal eight per cent of risk adjusted assets and that half of the capital must be tier one, a rough estimate of 25 gearing seems reasonable.

67. See Nagy, *International Business*, pp. 131–3. The risk reduction in the loan portfolio made possible by greater international diversification may mean that the banks are no less sound in 1980 than they were in the 1970s.
68. See *Economist*, 9 Oct. 1982, pp. 91–2.
69. See M. Mittelstaedt, 'Ottawa Refuses to Loosen Rules on Bank Capital', 'Report on Business', *Globe and Mail*, 26 Feb. 1985, p. B1.
70. See J.L. Darroch, 'Strategic Management in Turbulent Environments· The Canadian Banks in the 1980s', OCIB Working Paper No. 28, March 1990 Also see, G. Gherson, 'Banks Seek Shelter in Home Markets', *Financial Post*, 4 March 1989, p. 1; and S. Horvitch, 'Banks Beef up Branch Networks in New Era of Expanded Service', *Financial Post*, 27 March 1989, p. 7.
71. M. Stinson, 'Prime Wars at the Big 6', 'Report on Business', *Globe and Mail*, 31 Jan. 1991, p. B1.
72. This is true for all major Canadian banks See B. Milner, 'Royal Bank Eager to Expand South of Border', 'Report on Business', *Toronto Globe and Mail*, 25 Jan. 1991, p. B7; and B. Milner, 'Toronto-Dominion Foresees Better Times', 'Report on Business', *Toronto Globe and Mail*, 24 Jan. 1991, p. B9.
73. P. Lush, 'CIBC Goes after Business in the US', 'Report on Business', *Toronto Globe and Mail*, 18 Jan. 91, p. B2.
74. There is much in the press concerning the Canadian banks in the US. For example, see T. Tedesco, 'Move Over, Chase Manhattan', *Financial Times of Canada*, 5 Nov. 1990, p. 6; A. Brocklehurst, 'Canada's Banks Gain from U.S. Rivals' Woes', *Financial Post*, 23 Jan. 1991, p. 8; and H.D. Whyte, 'Canada's Banks Deny Merger Talks with US Counterparts', *Financial Post*, 1 Feb. 1991, p. 28.
75. Tedesco, 'Move Over Chase Manhattan', p. 6.
76. For a general comparison of the Canadian and US banking systems, see G.F. Boreham, 'The Contemporary Banking Scene', *Canadian Banker*, May–June 1987; idem, 'No Natural Separation', *Canadian Banker*, July–Aug. 1987, idem, 'The Central Banks', *Canadian Banker*, Sept.–Oct. 1987.
77. Federal Reserve Bank of New York, 'Recent Trends in Commercial Bank Profitability', Sept. 1986.
78. K. Howlett, 'Fed Opens Doors to CIBC, Royal Bank,' 'Report on Business,' *Globe and Mail*, 16 Jan. 1990, p. B1.
79. The T-D was named one of the excellent banks in the world by an independent panel of experts. See Davis, *Excellence in Banking*.
80. E. Terry, 'T-D Bank a Surprise in Japan', 'Report on Business', *The Globe and Mail*, 6 Aug. 1990, p. B1
81. Geoffrey Jones pointed out that the entrepreneurship of Canadian bankers is downplayed in this paper. I concur with his observations that the entrepreneurial vision of the bank CEOs, especially the early ones, did play a major role. However, perhaps just as important was differential regulation, which allowed the accomplishment of the visions While Canadian bankers were encouraged by regulators to be international, US bankers were restricted. This significantly altered the competitive landscape of North America.
82. It should be noted that investment dealers fall under provincial (state) jurisiction in Canada.
83. In the financial world of the 1990s, public policy with respect to financial institutions is generally forced to respond to market changes. Since public policy makers generally lack the power to prescribe market conditions, it is difficult to see how financial policy makers in developing countries could create conditions that would confer competitive advantages upon their domestic institutions

CONCLUSION

Fin de siècle: Canadian Business in the 1990s

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Canadian businessmen greeted the turn of this present century in an ebullient mood. Like Prime Minister Laurier, they believed that the twentieth century would 'belong' to Canada. The captain of Canadian industry was seen as the self-assured vehicle of huge capital flows pouring into and out of what was in many ways a prototype of a newly industrialised country.

Canadian business faces the prospect of the twenty-first century in a far less confident mood; even the most boisterous of Canada's boosters would not dare lay claim to the new century. Nine decades ago, full and profitable membership in the global economy seemed an attainable goal. An industrial strategy rooted in protected home manufacture and open access to world commodities markets was predicated on economic penetration of but a handful of industrialised economies in Europe and south of the 49th parallel. For its part, foreign capital eagerly sought out Canadian opportunities; the Canadian market offered a protected, affluent pocket for expansion. Few other 'developing' economies offered as promising an outlook.

Today, the 'global' economy is an immensely more daunting prospect in the eyes of Canadian businessmen and women. Every issue of the *Report on Business* or the *Financial Post* brings further news of what has become a complex array of 'global' economic challenges and opportunities: the Pacific Rim, Europe in 1992 and post-communist eastern Europe. Canadian business's predominant reaction to these seismic shifts in world business is anxiety. Canada's competitive position in the world economy has shifted fundamentally. As the smallest 'G–7' member with a population of only 27 million, Canada contends on the one hand with the fear that it is about to be swamped by huge trading blocks and, on the other hand, with the unavoidable need to restructure its own economy to meet these global shifts. Canada is no longer a market on which foreign capital casts an envious eye; our market is still affluent but in comparison with those of the new trade blocks, insignificant.

The ground is undeniably shifting under the feet of Canadian business. Many of the sureties of doing business in Canada, sureties reflected in the essays in this collection, are crumbling. The progressive liberalisation of world trade since the last world war has fundamentally eroded Canada's industrial base, long nurtured by the protectionism of the National Policy of 1879. Particularly in the 1980s, with the advent of free trade with the United States, the 'miniature replica' branch plant and the small domestically-owned manufacturing operation are becoming part of a dying breed. High labour costs and a thin national market have painfully reduced the central Canadian industrial heartland.

Large foreign MNEs now generally only consider Canadian investment if the product can dominate the Canadian market *and* penetrate foreign markets. A good example of such a 'global product mandate' would be General Electric's decision to let its Canadian subsidiary specialise in airfoil production for jet engines. Many other MNEs are simply closing their doors in Canada.

Such de-industrialisation has had important implications for Canadian financial flows, notably on inflows of foreign direct investment and outflows of corporate earnings to foreign parents. Canadian portfolio investment has thus been reasserting its attractiveness to foreign investors, particularly Japanese and European buyers of Canadian bonds, over the last decade.

In response to these shifts, Canada has been painfully attempting to reorient its economic posture. Canadian big business, powerfully represented by such lobbies as the Business Council on National Issues and the Canadian Manufacturers' Association, generally welcomed the 1988 free trade agreement with the United States. International competitiveness has become a political byword forcefully articulated by federal politicians. Canada, a nation which has historically generated at least a third of its GNP from trade, has in recent years tried to reorientate much of its federal economic policy to underscore the importance of global competitiveness. The diplomatic corps has seen the inclusion of trade officers in its ranks and the international trade portfolio in the federal cabinet has grown in stature to rival that of the finance minister. Until the American agreement was signed, Canada was the only OECD nation that did not have unimpeded access to a market of at least 100 million people. The prospect of enlarging the Canada–US agreement to encompass Mexico now looms. This shift to free trade has carried painful adjustment costs, as labour and small business have been quick to point out. Powerful and legitimate social and economic interests have grown up around Canada's old protected economy and have a natural tendency to deny current realities.

Industrial investment is, none the less, now much more footloose; branch plants have closed and even Canadian-owned industry has opted to 'shuffle off to Buffalo' and other American locales where labour costs and legislative barriers are less stringent. Companies once synonymous with Canadian ingenuity – like Varity, the former Massey-Ferguson – have moved south. Canadians have traditionally looked to the state to act as handmaiden of economic change. The federal government's ability to help business adjust to the bracing winds of more liberalised trade has, however, been limited in recent years by its own dedication to national deficit reduction and prohibitions on government assistance implicit in such free trade agreements. Similarly, Canadian business must also contend with the added constraints imposed by Canada's high cost state welfare system, costs left to the individual in many of the American states and Asian countries competing with Canada.

The sagging fortunes of traditional sectors of Canadian manufacturing have heightened expectations of performance by Canadian-owned MNEs abroad. Here lies 'smart', technology-intensive manufacturing. Companies such as Bombardier and Spar have found both foreign sales and foreign bases of operation. They have also learned to develop innovative approaches to international business, such as Bombardier's licensing of French high-speed train technology for the North American market. Nonetheless, Canada possesses only a handful of these 'world class' MNEs and lives in a risky marketplace, fraught with political pressures and yeasty technological change. Other Canadian MNEs will continue to prosper. Bata the shoemaker is well positioned in over a hundred countries as the 'people's' shoemaker. Alcan, with its fully integrated chain of aluminum production, will continue to prosper despite the ups and downs of the world aluminum market.

In the financial sector, Canadian MNEs are also experiencing changeable times. Canadian incursions into foreign real estate markets have proved mercurial investments. Canadian ownership of properties stretching from Canary Wharf in London to Manhattan's skyline are vulnerable to economic cycles and financial stringency. Canadian banks, on the other hand, continue to prosper abroad. Having largely digested their Third World losses, Canada's 'big five' banks seem poised on the verge of penetrating American retail banking. This too is a nervous process, coming as it does at a time when the Canadian financial system is undergoing a fundamental restructuring. The old 'four pillars' of Canadian finance – the once rigid demarcation that existed in the provision of financial services between the banks, insurance, trust and investment companies – have crumbled. Banks can now more appropriately be styled financial service centres, where Canadians will soon be able to do all their financial 'shopping' – insurance to stocks obtainable at the same counter. This broad domestic base should serve Canadian banks well abroad, providing them with the capital base to move aggressively abroad and to facilitate capital movement in and out of Canada.

Financial deregulation is but one of several fundamental shifts in Canadian public policy that are tending to change the framework within which Canadian business operates. Deregulation has touched other sectors of the economy – trucking and telecommunications, for instance – thereby unsteadying industries which have in the past inhabited a relatively stable environment. Privatisation, although somewhat muted in Canada, has also altered the role of the state in the Canadian economy. With the privatisation of state-owned companies such as Air Canada and Petro-Canada, the state now possesses less direct leverage over the national economy.

A last, although less tangible, unsteadying influence affecting Canadian business in the 1990s is what Canadians have come to call the 'national unity question'. The nation's inability to determine its constitutional course, particularly in relation to the province of Quebec, has introduced uncertainty into business planning. One paradoxical outcome of this conflict has been the emergence, for the first time, of an indigenous Quebec 'big business' sector. Companies such as Bombardier and consulting engineers SNC-Lavelin have prospered to a degree as a result of Quebec's 'distinct' market place and interventionist provincial government policies such as its controversial sign law (forbidding non-French signage). Constitutional frictions not only consume vast amounts of political energy, but carry the ultimate prospect of divided jurisdiction and increased, or uneven, taxation within the confederation.

Amid this pervasive uncertainty in Canadian business, it would be inviting to take refuge in the proposition that Canada's traditional strength in natural resources offers a steadier strategy for the future. There is undoubtedly much strength here. Canadians can still 'hew and draw' natural resources in league with the best. Canadian coal sails daily for the Far East from Port Roberts outside Vancouver, Canadian natural gas penetrates deeply into the US market and the *New York Times* is still printed on Canadian paper. None the less, there are problems here too. Stiffer international competition – Brazilian paper and iron, for instance – has eroded Canada's once immense competitive advantage. Environmental concerns not only crimp Canada's ability to exploit traditional resources, but also cloud its ambitions to promote exports of new staples such as hydro-electric power and pure Canadian water. International disputes have intruded into other traditional resource industries, notably the Atlantic fishery.

In his introduction to this volume, Greg Marchildon alluded to the need to 'discover new strategies to compete effectively at home and abroad'. The foregoing *tour d'horizon* of Canadian business in the twilight of the century does not augur well for the emergence of these new strategies. The prevalent mood and direction of the country appears to be in the direction of decentralisation, towards an emasculation of any central power to mould and direct the *national* economy. Entry into a new world economic order hinted at in Europe and the Far East requires concerted national effort. 'Bigness' has never come easily to the Canadian economy; we have regulated and fragmented our business with the effect that our international competitiveness beyond our natural resources has become dangerously dependent upon nervous specialised niches in the world economy. In a world hungry for capital to rebuild Eastern Bloc economies or to reinforce European strength, Canada will find itself scrambling for capital to reposition its own economy in a world that no longer sees it as a promised land.

A century ago, Canadians perceived their chances of economic survival in equally gloomy terms. Goldwin Smith, a notoriously pessimistic commentator on Canadian affairs, published his famous *Canada and the Canadian Question* in 1891. Canada, he said, was but a string of pearls, an economic impossibility weakly bound by a cord of unity that might fray and break with the least tug. Laurier and the resource boom of the new century overturned Smith's doomsaying in the spurt of economic growth down to World War One. Times have once again changed. Whose day may yet come?

BOOK REVIEWS

HENRY ROSEVEARE (ed.), *Merchants and Markets of the Late Seventeenth Century: The Marescoe-David Letters, 1668–1680* (Oxford: OUP/British Academy, 1991. Pp. xx + 668; illus.; maps. £35).

In studying English overseas trade in the late seventeenth century, historian's have largely relied until now on official trade statistics and the records of the chartered trading companies. Vital though these sources are, they provide an imperfect picture of trading developments in this period, not least because much trade was carried on outside the chartered companies. In these circumstances, Henry Roseveare's study of Charles Marescoe, his widow, Leonora, and her second husband, Jacob David, each of whom became significant private merchants in Restoration London, is a very welcome addition to the literature in this field. The Marescoe-David papers were discovered by Roseveare in the Chancery Masters' Exhibits in the Public Record Office, where they had lain, seemingly untouched by historians, for almost 300 years since they were deposited in court during the course of a legal dispute between Leonora David and her daughter by her first husband. Spanning a decade and a half, the papers cover the commercial history of three London merchant houses in which Charles and Leonora Marescoe and Jacob David were the dominant partners. Beginning in 1664, the archive consists of several ledgers and account books as well as some 10,500 in-letters, the latter essentially confined to the period from 1668 onward. Many of these letters are in Dutch, French and German, reflecting the firm's close personal ties with the continent, and all are apparently in a fragile condition and, as a result, on restricted access to historians. In this latest volume of the Records in Social and Economic History series of the British Academy, Roseveare publishes some 480 (or some five per cent) of these letters, together with, in an appendix, a small sample of out-letters from the firms, which were found in Swedish archives. All those originally written in Dutch and German have been translated into English. In selecting letters for publication, the editor was constrained to some extent by the illegibility of some of the correspondence, but all the major centres of trade with which the Marescoe-David partnerships were concerned – Stockholm, Hamburg, Amsterdam, the Spanish

Netherlands, northern France, Seville, Leghorn and Venice – are covered by the letters published.

The publication of the Marescoe-David letters found in this volume would, by itself, represent a major contribution to the study of English commercial history in this period. Roseveare substantially enhances their value, however, by prefacing them with a 200-page introduction and by including appendices on commodity prices, exchange rates and marine insurance premiums derived from evidence found in the firms' papers. The introduction is a remarkable study in its own right. It provides a history of Charles Marescoe and his family from their origins in Lille to their migration to and settlement in London, and also reconstructs the story of the dispute between Leonora and her daughter that resulted in the lodging of the family's papers in Chancery. Equally importantly, it offers, on the basis of close research in the surviving ledgers and account books, an extraordinarily detailed picture of the commercial dealings and fortunes of the family between 1664 and 1680. This includes a thorough study of the level and structure of their trade to all areas of western Europe from Sweden and Hamburg in the north to Spain and Italy in the south, the problems that arose in settling international debts, particularly with the Baltic, and the growth of the family's wealth. The analysis of trade patterns is enriched in several cases by evidence gleaned from continental archives. All historians of trade in this period will find much to interest them in Roseveare's impressive introduction. Particularly fascinating to me was the importance of re-exports of American and Mediterranean goods to the Marescoes' and David's commercial dealings with northern and north-western Europe in the 1660s and 1670s. Others, no doubt, will be equally fascinated by Roseveare's discussion of the profitability of their trading ventures and of the way in which the attitudes of partners to personal consumption affected levels of trading capital available to the three firms between 1664 and 1680. Overall, this excellently produced collection of Marescoe-David letters is an exemplary piece of scholarship, and, as editor, Roseveare has certainly put historians of London's trade in the late seventeenth century very much in his debt.

University of Hull DAVID RICHARDSON

DAVID CROSSLEY and RICHARD SAVILLE, *The Fuller Letters, 1728–1755: Guns, Slaves and Finance* (Lewes: Sussex Record Society, 1991. Pp. xxxvii + 307; illus.; maps. £17.50).

The originals of the Fuller letters are to be found in a Letter Book now on permanent loan in the East Sussex Record Office in Lewes. The first

597 are believed to have been written by John Fuller senior, who lived between 1680 and 1745, and the remainder by his eldest son, the main heir to the Fuller Sussex estates, who lived between 1706 and 1755, though Stephen Fuller, a younger son, and unidentified estate servants may have penned some of them. The typescript copy of the Letter Book made by Mrs V.B. Lamb which can be consulted at Lewes forms the basis of this publication, edited by David Crossley, Reader at Sheffield University, and Richard Saville, Lecturer at St Andrews University, both known for work on the history of the iron industry, though their respective responsibilities are not revealed. Some of the letters which are not routine or repetitive are printed in full, others are summarised. All the letters are out-letters since the in-letters do not appear to have survived. But there was no great intensity of correspondence; John Fuller senior was responsible for about 37 a year while his son wrote fewer, about 30 letters a year, in both cases substantially less than one a week. Sometimes there was a flurry of correspondence, at other times there was less activity. Most of the letters were written at the Fuller residence, Rosehill, now Brightling Park, and most were addressed to relatives, though an analysis of recipients would have been helpful, particularly as the ascriptions heading letters vary and do not always coincide with those employed in the index.

The letters have three main concerns. The first deals with the management of the Fuller estates, which grew substantially in acreage in the first half of the eighteenth century. Reflecting this development, John Fuller announced his intention in 1747 to become 'a king of Brightling'. These letters provide information about relations with tenants, the problems of the management of smaller Wealden farms which were blessed with one of the more intractable soils of southern England, and the nature of the husbandry carried on. A group of letters is concerned, after the death of Sir John Lade, a London brewer, with the administration of his estates which John Fuller agreed to undertake, provided an adequate allowance was made. But problems ensued. By the 1750s tensions between the heir and the Fullers led to disagreements and their removal as trustees.

For the business historian the main usefulness of this volume stems from the light the correspondence throws on the technical problems of charcoal iron production at the Fullers' Heathfield furnace. Unfortunately the map provided to indicate the location of this furnace and its relation to other iron works is a muddy and uninformative reproduction of an early eighteenth-century map, markedly inferior to the maps Crossley provided for his edition of the *Sidney Ironworks Accounts* (Camden vol. 15, 1975). The casting of guns for the Office of

Ordnance and other customers is also discussed. It was clearly difficult to produce guns of a bore sufficiently accurate to pass proof for the Navy. Less satisfactory guns were sold for use on merchant ships. The trade with the government dominated the Fullers' iron business but added to their financial problems. The Crown would not make payment until a whole order was completed, and refusal of a single gun could delay payment for up to twelve months. In both the iron letters and those concerned with agriculture, the deplorable state of the local roads is plainly apparent.

The third group of letters deals with the administration of the property owned by the Fullers in Jamaica, a discussion accompanied by another unsatisfactory map. The letters confirm that on plantations whose proprietors resided in England there was often wilful mismanagement and waste. To remedy the situation, Rose Fuller went to Jamaica in 1733 and his residence there helped to improve matters financially though slaves figure less prominently in the correspondence than in the rather catch-penny title this volume has been given.

While, as discussed in the introduction, this correspondence describes the activities of an eighteenth-century landowner, for the business historian the usefulness of this volume is limited since there is unfortunately no systematic information available about costs, production or sales.

Exeter WALTER MINCHINTON

ADRIAN RANDALL, *Before the Luddites: Custom, Community and Machinery in the English Woollen Industry, 1776–1809* (Cambridge: CUP 1991. Pp. xvii + 318; illus.; maps. £32.50).

Adrian Randall's series of articles in the 1980s has provided an encouraging preview for this book. The culmination of his work, which arose out of a Ph.D. thesis, has been well worth waiting for. The volume will be widely recognised as a very significant contribution to the understanding of the inter-relationship between society and economic change in the early stages of Britain's industrial transformation, and particularly the extent to which social and community reaction influenced that transformation.

The focus is the woollen industry in the West of England and the West Riding of Yorkshire. The time period, 1776–1809, extends from the innovation of the spinning jenny in the two regions, the first major technological departure in the industry, to the final repeal of many longstanding statutory controls which in theory, if not always in practice, had regulated organisational change in the industry. The woollen industry was still Britain's major manufacturing activity in terms of employment and value of output, and the organisation of its activities are shown to have been strongly influenced by deeply rooted traditions within a strong associated community culture. Dr Randall traces, often in very great detail, the response to the attempts to innovate new techniques in wool preparation, spinning, weaving and finishing in both areas and is successful in producing a penetrating comparative study. The differences in degrees of resistance that he finds in the West of England compared with the West Riding of Yorkshire are seen as being primarily the result of differences in the pre-existing organisation of work in each area. In both he argues a powerful community culture stressed custom and stability and proved hostile to industrial transformation. He shows that resistance was far more sweeping and widespread than has been believed and that local protest was not a knee-jerk reaction to particular threats, but a carefully and progressively calculated campaign of opposition. Violence, when it did occur, was not the result of weakness and failure to organise. It was not a sign of immaturity in labour organisation. It was not an indication of despair or the unthought-out reaction of industrial primitives. It was a deliberately calculated policy, pragmatically taken as part of a graduated, carefully controlled response, which included other methods of opposition such as recourse to law and community pressure, to influence particular key innovators, who were seen as transgressing existing legislation and offending against the established customs of the industry. He sees resistance as being informed by both a moral and political economy, which had no place for the *laissez faire* ideology of the innovators and which saw itself as being legitimatised by the perceived immoral and illegal practices of those innovators.

Dr Randall finds distinctive differences in the degree and type of opposition in the West of England compared with the West Riding. Those differences he explains primarily in terms of pre-existing local arrangements for the organisation of work, the character of the local community and the local impact machinery would have on work itself. The traditional organisation of work is recognised itself as shaping community attitudes and craft consciousness. The West of England woollen worker valued economic and social independence. Although need for work created dependency, the nature of that work allowed independence and proud status, and control over time and leisure. The quality of the product and craft specialisation enhanced that status. It was not something to be given up lightly. Thus the West of England is seen as a self-confident, craft conscious and proud community, prepared to defend its rights and privileges vigorously. Craft specialisation and demarcation constrained opportunities for workers to transfer to other processes as a result of specific technological threats. Opposition was an inevitable consequence and was something which had, he argues, widespread support even in those elements of the community that were not immediately affected and not directly involved in the industry. Although the extent of this community support is shown, the reasons for it are not altogether convincingly argued.

In West Yorkshire, Dr Randall argues that independence and status were equally important, but labour tasks were less clearly demarcated; craft consciousness was thus less strong, and capital–labour relationships were different. Labour mobility within the industry in the West Riding limited potential conflict between capital and labour, and output growth, with its labour needs, somewhat compensated for the consequences of innovation of labour saving devices. The extent to which machinery threatened employment in the eyes of the local community and the degree to which it might augment work were amongst the determinants of opposition.

The different regional responses to the new techniques are seen as helping to explain the subsequent relative success of the Yorkshire woollen industry compared with its West of England counterpart. Dr Randall does not refute Richard Wilson's stress on superior entrepreneurial organisation and marketing methods in Yorkshire, but he does suggest that the strength of opposition to labour saving and cost reducing new methods in the West of England was sufficient to delay innovation significantly at a very crucial time, to the ultimate competitive disadvantage of the region.

Besides his more detailed findings, Dr Randall argues some broader implications from his work. He sees his study as contributing to the resurgence of a regional emphasis in economic and social history. His specific findings and their broader implications illustrate well the continued value of detailed regional investigation. The large factory is stressed as a great ogre in the eyes of woollen communities, which perceived it as a constant threat, but the pervasiveness of that fear over a long period and widespread areas is assumed rather than proved. The book, however, convincingly shows how important it is to recognise the extent to which the social context of manufacturing affected its potential for reorganisation and to understand the significance of human cooperation in that transition. One must, however, query one of Dr Randall's wider conclusions. He argues that although notions of Industrial Revolution in this period are out of favour with economic historians, a social revolution with 'deep and profound consequences'

(p. 287) was occurring. For the woollen workers of the West of England, and to a great extent in the West Riding as well, one must agree, but surely most of society remained distant both geographically and in its work for a long time yet from the struggles which this book examines. Outside the West Riding and Wiltshire and Somerset, how many knew of the conflict that was being fought in this traditional industry? How many were affected by it or any other similar conflict?

University of York D.T. JENKINS

JAMES A. JAFFE, *The Struggle for Market Power: Industrial Relations in the British Coal Industry, 1800–1840* (Cambridge: CUP, 1991. Pp.xi + 228. £30.00).

It is not easy to say anything new about industrial relations in the nineteenth-century British coal industry. No industry has been studied more intensively than coalmining, and no aspect of coalmining has been examined with more interest than the struggles of the trade unions to improve the pay and conditions of their members.

Happily, this historiography seems to inspire rather than intimidate James Jaffe, who draws upon it to produce a study of originality and importance. Jaffe's argument is that it was the struggle for control over market relations, rather than the labour process, that constituted the core of industrial and class relations in the Northumberland and Durham coalfield during the first 40 years of the nineteenth century. He claims that the owners attempted to control both the labour market and the market for coal: they did so, he maintains, by encouraging the stability and isolation of the workers that they employed, and by extending the demand for – and raising the price of – the coal that they produced. However, because the owners were unable to control their workers at the point of production, Jaffe believes that the struggle for control shifted to the wider community. Accordingly, he devotes particular attention to the examination of religion and trade unionism in the region. He denies that mass trade unionism was motivated by Methodist ideology, and points to the paradox that while there was little correlation between revivalism and trade union growth, the decline of trade unionism contributed to a decrease in Methodist support. He denies, too, that the members of Tommy Hepburn's union analysed society in terms of the labour theory of value, arguing that the strike of 1831 was fought primarily to secure more equitable market relations: the union, he points out, sought not only to restrict the output of coal but also to restructure the annual bond and to license the movement of labour.

These arguments are propounded with force and authority, their implications discussed with verve and enthusiasm. Jaffe believes, for instance, that the nature of industrial relations in early nineteenth-century Northumberland and Durham means that historians of the coal industry have been mistaken in identifying a transition, around mid-century, from customary to modern, market forms of collective bargaining. He goes on to suggest that this fundamental continuity of collective bargaining in coalmining means that historians of nineteenth-century Britain may have been mistaken in drawing too sharp a distinction between 'the preindustrial artisanal community and the competitive individualism of modern capitalist society' (p. 197). However, this is to push the argument too far. For in an industry of such economic, social and cultural diversity as British coalmining, it is hazardous to make generalisations on the basis of developments in a single coalfield, particularly one as advanced as Northumberland and Durham. In an economy as unevenly developed as that of early nineteenth-century Britain, it is surely incautious to offer generalisations upon the basis of developments in a single industry, especially one as untypical as coalmining.

This book should be read for what it is: a meticulous, imaginative and innovatory study of industrial relations in the Northumberland and Durham coalfield between 1800 and 1840. As such, it sets a standard against which any regional study of industrial relations in the nineteenth-century British coal industry will now be judged.

Wolverhampton Polytechnic JOHN BENSON

MICHAEL WINSTANLEY (ed.), *A Traditional Grocer: T.D. Smith's of Lancaster, 1858–1981* (Lancaster: Centre for North-West Regional Studies, Occasional Paper No. 21, 1991. Pp. 48; illus.; map. £4.95).

Reading this book brings back memories of traditional grocery shops. It is almost possible to smell the aroma of roasted coffee, bacon and floor polish, and picture the marble-topped counters and the assistants in their aprons and ties. These shops have largely gone now, as has the personal attention and home deliveries which were part of the service they offered. This book charts the rise and fall of one such business over three generations. T.D. Smith's was a well known family grocery business in Lancaster with a chain of stores across North Lancashire and with an extensive delivery network stretching into the Lake District and the Yorkshire Dales.

The research for the book was carried out by a group of students, in the History Department at the University of Lancaster, as part of their undergraduate studies and the text has been written largely by them under the guidance of their tutor. The work is based on an unusually rich miscellany of material surviving from the business, including takings books, wages books, catalogues, press cuttings and an unpublished autobiography of T.D. Smith. To this has been added information from other sources (newspapers, directories, etc.) and there collections of members of the family, former employees and customers. As such, the study represents not just a fascinating insight into the workings of one particular family business but also an example of the types of sources and approaches which can be used for research into this type of historical business operation.

The book examines a number of topics relating to the development and management of the grocery business. T.D. Smith owed his success partly to his own determination and foresight, and partly to his connections with the Pennine Methodist farming community from which he originated, and which provided the basis for his extensive delivery network. He successfully carved out a niche for his business which catered for both the stable working-class market and the 'better class of shopper'. He endeavoured to provide good quality produce at reasonable prices and his whole trading philosophy was based on prudence, probity, personal service and knowledge of the trade.

In the period after the Second World War this type of independent business became increasingly difficult to sustain faced with the competition from the large retailing multiples. The delivery service became costly and the regular custom began to drift away. Shopping habits changed and left the traditional grocer in an impossible position. Unable to match the prices of the super-markets and lacking the secure neighbourhood market of the corner shop. This book is a reminder that with their demise we may also have lost a particular style of doing business.

Liverpool Polytechnic STEPHEN JACKSON

JAMES FOREMAN-PECK (ed.), *New Perspectives on the Victorian Economy* (Cambridge: CUP, 1991. Pp. xv + 353. £30.00).

This is a selective compilation of papers first presented to the ESRC-sponsored Quantitative Economic History Conferences of 1986 and 1987. The volume covers a wide range of topics, some of which will probably have little interest to most business historians. Given the origins of the book, it is not surprising to find that it is by no means a comprehensive treatment of the major themes in the historiography of the Victorian economy nor that many of the essays will appeal or be accessible only to a rather limited audience.

The contents are divided into three parts headed 'Technology and Industrial Organisation', 'Distribution' and 'The Monetary System and Monetary Policy'. All the papers use economic theory and/or statistical techniques, often of a highly sophisticated nature. The essays of most interest to business historians are in the first of these sections, although it should be noted that part II includes Feinstein's new estimates for the cost of living in 1870–1914 which will obviously become a standard reference source. Part I comprises papers by Cantwell on international comparisons of patenting, by Foreman-Peck revisiting the famous debate on the social savings from British railways, by Millward on the regulation of gas and water utilities and by Nicholas, who provides a critique of the conventional wisdom that British multinationals were badly managed before World War II.

Of these four contributions, I found those by Foreman-Peck and Millward to be in the best traditions of the new economic history, while the other pair seemed somewhat preliminary. Foreman-Peck and Millward each exemplify mastery of the appropriate economic concepts which enable interesting lessons to be drawn from history and both report important findings. Foreman-Peck provides an estimate of the long-run effects of railways which is much larger than that drawn from earlier work by explicitly taking into account their impact on investment. He estimates that railways increased gross domestic product by 15 per cent in 1865 and about 40 per cent in 1910 (p. 89). Millward explores the problems in extending gas and water provision to all in the context of arm's length regulation of the utility companies where they were not stable natural monopolies and in so doing gives valuable insights into the reasons for municipalisation of many of these activities. Cantwell offers some useful information on comparative patterns of patenting but his study seems in the end to have lacked the resources to obtain a big enough database to throw much light on relative British decline or on rival theories of technological progress. Nicholas' paper would be unlikely to convince the referees of a serious journal and will, I suspect, infuriate business historians as an unpersuasive use of regression analysis to buttress strong prior beliefs.

The quality of the research embodied in this collection is nearly always respectable and on occasions very impressive. This ESRC study group has always received a high standard of contributions and that trait is continued here. Nevertheless, several of these papers would plainly have benefited from going through the refereeing process of a major journal. Bearing this in mind and noting the delay of several years involved in this mode of publication, choosing this outlet as a method of dissemination of research findings only seems justified if their impact is enhanced by appearing together. In my judgment this is unfortunately not the case, despite the valiant efforts of the editor, because the contents are in the end too disparate. Few will find enough of sufficient immediate interest to wish to spend £30 on this book and, sadly, the eventual readership of the individual offerings will probably be much lower than their quality deserves.

University of Warwick N F.R. CRAFTS

CHARLES HARVEY and JON PRESS, *William Morris: Design and Enterprise In Victorian Britain* (Manchester: Manchester University Press, 1991. Pp. x + 257; illus. H/b £45, p/b £12.95).

William Morris was a man of many parts, but comparatively little has been written about his activities as a businessman. Harvey and Press set out to show that many of Morris's greatest achievements were as an entrepreneur.

Morris had an eventful business career. He was not without private means and these helped to sustain the earlier and less profitable phase of his business activities. Harvey and Press stress that Morris was not a profit maximiser, and that his primary aim was to improve the taste of the Victorian consumer, but that his brilliance in the field of design, his capacity for hard work, and his considerable business acumen, ensured that his enterprises were successful. In the 1860s stained glass windows were the most prominent products of Morris and his partners, who derived great advantage from a boom in church building and the prevailing taste for increasingly elaborate ecclesiastical architecture and furnishings. Morris's detailed studies of theology and church history at the University of Oxford turned out to have been an excellent training for an entrepreneur in this particular line of business.

Morris diversified into wallpapers, carpets and other designer products when growth in the ecclesiastical market had begun to tail off. Initially the firm had little manufacturing capacity and subcontractors did work to Morris's designs. But, as it was difficult for Morris to control the quality of work done by outsiders, he established a manufacturing plant at Merton Abbey to produce the top of the range tapestries, wallpapers and other items. Morris continued to diversify his interests in his later years and formed the Kelmscott Press to print literary and artistic volumes.

Harvey and Press do not duck the issue of the tension between Morris's socialist ideals and his vocation as a capitalist. They argue that he was a good employer by the standards of the day, but this did not prevent him from being anxious to keep down costs and maintain worker discipline. Morris thought that he could do most to transform society's values through making his designs as widely available as possible. To achieve this end he had no choice but to run his business on a competitive basis.

This is a very detailed and thoughtful business history, which succeeds in showing how Morris's business activities were inextricably related to his artistic, social, and political enthusiasms. That Morris managed to balance these potentially conflicting interests to such an extent that he still made a profit is tribute to his unique abilities. Manchester University Press have produced a well illustrated and designed volume which does Morris justice.

Harvey and Press claim that one of their objectives is to refute Martin Wiener's allegation that Morris was one of the men responsible for the lack of an English industrial spirit. But does the fact that Morris was a successful businessman necessarily vindicate him from this charge? Perhaps Wiener might reply that Morris made his money by pandering to the British anti-industrial spirit. Economic history is full of examples of businessmen who made a profit by selling a life-style which was bad for people.

This book is an admirable contribution to the debates on William Morris, Victorian design, and the behaviour of small businesses in nineteenth-century Britain. It may be highly recommended.

University of Manchester JOHN SINGLETON

JOHN SINGLETON, *Lancashire on the Scrapheap: The Cotton Industry, 1945–1970* (Oxford: Pasold Research Fund/OUP, 1991. Pp.xiv + 256. £35.00)

Where books already exist upon the history of the cotton industry more tend to be written and, conversely, where such books do not exist they tend not to be written: hence the large, familiar and continuing 'gaps' in the literature of the industry's history. It is the distinctive achievement of Dr Singleton to prove the inadequacy of this particular interpretation of the industry's historiography and boldly to venture into a field where he has had no predecessors, apart from Alan Fowler in *The Barefoot Aristocrats* (1987).

The returns from his research have been substantial, as the appropriate reward accruing to any pioneer. The strength of his comparative advantage was apparent in the three articles published between 1986 and 1991 on the history of the industry between 1945 and 1971. Now his monograph makes the fruits of his research more widely available and will be warmly welcomed. One of his undoubted advantages has lain in the abundance of his source material which contrasts sharply with the paucity of material relating to the heroic age of the industry. He has made effective use of the censuses of production, the annual statements of trade, the records of trade associations down to 1960, those of trade unions down to 1965, Cabinet Papers for 1944–52, Cotton Board minutes for 1944–54 and the Dalton Papers for 1942–5. His method is to present a statistical analysis, in 32 tables, of the industry's performance from a macro-economic perspective and to apply a multi-factoral mode of economic analysis. The conclusions are of considerable interest and differ somewhat from those which he reached in his thesis of 1986, when he saw the decline of Lancashire as a precursor and a paradigm of the de-industrialization of the UK. The resilience of the British economy in the late 1980s has, however, convinced him that the shrinkage of the cotton industry was too slow for the public good rather than too rapid and that 'most investment in cotton after 1950 was misguided' (p. 167) because 'cotton had no conceivable role to play in the British economy' (p. 232). The implication, drawn indirectly on p. 230, is that the industry had ceased to be a creative force in the economy and had become a positive drain upon the nation's wealth. The question must then follow, when did the great transition take place from the industry serving as a generator of wealth to one clinging as a parasite to the host economy? Any answer to this question requires a recognition of the great divide in the fortunes of the industry created by the events of the year 1951. From 1951 the position of the industry changed rapidly and dramatically for the worse as foreign competition revived and all the dreams of socialist reconstruction conjured up in 1945 evaporated. The ten chapters of the book are, therefore, logically divided between those covering the years 1945-50 and those dealing with the years 1951–65.

Dr Singleton illuminates a wide range of issues bearing on the viability of the industry. Particular consideration is given to its capacity to reform its patterns of production, especially in so far as these reflected a delicate balance between the interests of capital and those of labour. He shows convincingly that all the reforms proposed were inter-related in nature and that they were, therefore, difficult to implement on any piecemeal basis without a radical transformation in the whole structure of the industry, as Lazonick has also argued.

For business historians the most valuable part of the book is the survey in chapter 10 of the mergers of 1963–68. The large-scale producers of artificial fibre then moved into Lancashire in order to secure their markets and so accelerated the transformation of the industry's structure into a vertically integrated mode. Courtaulds and ICI, 'the dinosaurs of British monopoly capitalism' (p. 228), however, arrived too late upon the scene to avert further decline.

Certain aspects of the story have been left for future investigators to unravel, especially as they relate to the history of individual firms and combines, because the mass of archival material is too great for any individual scholar to digest. One apparent statistical discrepancy might be mentioned. The ratio of automatic looms to the total number of looms in the world in 1950 was surely 33 per cent rather than 48 per cent, a difference which is the more important because the world proportion of 48 per cent is contrasted with a Lancashire proportion of 10 per cent. The proportion of automatic looms in the UK in 1952 is shown as 34.4 per cent (p. 143) instead of as 11.55 per cent. This survey will deservedly enjoy a wide readership. It illuminates a neglected period in textile history and will prove, by virtue of its data, its methods and its ideas, of great value in the future. This book will almost certainly not prevent the publication of other works on the subject: it may indeed be Dr Singleton's fate to have provided a model for future scholars to imitate.

University of Manchester D A. FARNIE

ROGER BURROWS (ed.), *Deciphering the Enterprise Culture: Entrepreneurship, Petty Capitalism and the Restructuring of Britain* (London: Routledge, 1991. Pp. 205. £35).

In this collection of nine articles, the editor presents a catholic analysis of 'enterprise culture' and its development in contemporary Britain. The collection tends towards a more liberal interpretation of entrepreneurship and the rise of the self-employed than has hitherto been the trend. The foreword by Professor Curran introduces the new and radical theme of the book, setting the scene for the subsequent articles. Of the nine extremely competent and very interesting articles, it is, perhaps, appropriate to select three for special attention.

Angela Dale's contribution provides an incisive and helpful distinction between the 'self-employed' and 'entrepreneurship'. For students and researchers alike, her explanation of anomalies that occur in the statistical collection of small firm data is essential reading. Al Rainnie brings us up to date with current thinking on the large firm/small firm interface and the labour process characteristics of small firms, building on his previous work in the area. Dick Hobbs' offbeat research into 'working class entrepreneurship and business-like policing' tries to identify entrepreneurial commonalities between East Enders and the Metropolitan CID. Although entertaining and elegantly written, it has to be said that the link is tenuous, and Hobbs relies on a series of colourful anecdotes to bolster his arguments; the only cliche he does not use is 'you got me bang to rights, guv'.

Of the remaining articles, John Ritchie attempts to conceptualise the development of the enterprise culture by means of a frame analysis; Colin Mason gives a geographer's view of spatial variations in enterprise formation; and Roger Burrows delivers a multivariate analysis of the petty bourgeoisie.

As a 'critical analysis of the various manifestations of the enterprise culture', the book poses some fundamental political questions which, hopefully, may act as a stimulus for researchers, coming, as it does, at the dawn of John Major's 'classless society'. This collection has everything: spatial variations in enterprise, the welfare state, the National Health Service, the petty bourgeoisie and East End criminality; from the Starship Enterprise to East Enders in 205 pages. As such it is not only useful, but makes interesting reading.

The collection as a whole reflects a characteristic of the field of small business research, in that it presents new and underdeveloped research alongside the work of established authorities on the subject. Having read his introduction and his own contribution, I would have liked Burrows to pull together the disparate strands of his collection in a concluding chapter, but perhaps this omission is intentional and he leaves the reader free to make of it what they will. From a sociological stance the book makes fascinating reading, for scholars of small business and entrepreneurship it is essential.

University of Stirling SARA CARTER

JUDITH EISENBERG VICHNIAC, *The Management of Labor: the British and French Iron and Steel Industries, 1860–1918* (Greenwich, CN, and London: JIA Press Inc., 1991. Pp. xiii, 244. £41).

Starting with the claim that existing explanations for differences in systems of industrial relations between countries are inadequate, Judith Vichniac compares the strategies used by employers in the iron and steel industries in France and Britain in the period 1860–1918. Covering ground familiar to economic historians, she shows that while in France employers adopted a paternalistic and authoritarian stance, this gave way in Britain to the acceptance of collective bargaining with the trade unions and the resort to conciliation and arbitration as a method of dealing with disputes.in the structure and development of the industries, though cultural values, social conditions and political factors had a part to play. In the French case, for example, part of the legacy of the Revolution was that trade unions and strikes were illegal and not recognised until the 1880s. In Britain, unions secured a more favourable legal position; in iron and steel in particular their rights were won as a result of hard-fought strikes in the 1860s.

To begin with the British industry was technologically more advanced, bringing workers together in large plants with a rigid division of labour. Much work was handled by skilled men on a contracting basis. This was less common in France where iron-masters, still linked to land ownership, employed workers coming from the peasantry or had to recruit foreign immigrants because of the shortage of labour. Paternalistic relations thus struck deeper roots and had a longer life in France where, until the 1850s, much production was on a small scale, still burning charcoal until forced to adapt following the Anglo-French Treaty of Commerce (1860). The adoption of new techniques (and the shift from iron to steel) put a premium on building up and conserving a stable and experienced labour force, especially the essential core of skilled workers. French employers thus pursued their established course, binding these workers to the firm through cheap housing, social benefits, schools and other facilities (there was also a religious dimension of which Vichniac says little). Leading iron-masters, like Eugene Schneider and the de Wendels, took an active part in managing their plants and preserved a paternalistic relationship with their workforce in veritable company towns. There was no real parallel in Britain, where the skilled workers succeeded in establishing some control over the workplace as well as building their own organisations: friendly societies, co-operatives and trade unions. During the period 1890–1914 collective bargaining became well-established and unionism spread to the less skilled.

Vichniac claims that 'by the 1890s, British and French workers lived in different worlds despite the commonality of their work experience' and although the technological gap had closed. Despite the legalisation of unions under the Third Republic, the atmosphere in the French industry remained repressive and employers changed workshop rules and manning schedules without consultation. Eventually, however, the French workers became more militant with a series of important strikes in the main steel-making firms. Employers reinforced their paternalistic methods, including the formation of company unions. Under the aegis of the Comité des Forges a strike fund was created to assist the fight against the unions. The strikes also brought the state into the industrial arena in the name of social peace and in the absence of any regular conciliatory mechanism.

The penultimate chapter looks at the two industries in World War I. In Britain the system of controls necessary in wartime could be grafted on to the existing structure. In France, however, where the industry suffered from enemy occupation, there was more of a break with the past, the state having to intervene in relations between unions and employers in the absence of any system of collective bargaining and conciliation. However, no permanent system of conciliation or arbitration issued from the war, but, in subsequent years, especially after 1936, the state was drawn in as a mediator. While Vichniac has made a strong case, it suffers from any comparison between the chosen industries and other industries in Britain and France. For example, paternalism was not confined to the iron and steel industry and the process of unionisation in the British iron and steel industry had its parallel in other industries.

Gravesend TOM KEMP

CHARLES E. McCLELLAND, *The German Experience of Professionalisation: Modern Learned Professions and their Organizations from the Early Nineteenth Century to the Hitler Era* (Cambridge: CUP, 1991. Pp. x + 253. £30).

Both the term and the concept of the 'professions' are peculiarly Anglo-American and cannot be directly applied to other countries such as Germany, just like the Russian 'intelligentsia', which must always remain a puzzle to English-speaking observers. Nevertheless, professions did exist in Germany, and this attempt to interpret the history of one country in terms intelligible to another is greatly to be welcomed.

Traditionally, the German professions have been judged to have been weak and submissive in the modern era, not least because of their easy subjugation to the Hitler State after 1933. This judgement is considered by McClelland to be superficial and unjustified, a part of the general tendency of Anglo-American writers to view their own history as the norm and all else as an inferior alternative. German professions, it is true, began under much closer state control or tutelage than those further west, right up to the onset of industrialisation around 1860–70. Not only judges, public prosecutors, higher civil servants and other lawyers, university professors and teachers, engineers and army officers, but also many doctors and even clergy – the latter curiously neglected in this work – were state employees, directly or indirectly.

The emancipation of the three traditional professions – the law, the cloth and medicine, as well as of the newer ones of the later nineteenth century, into what became known as the *freie Berufe*, was thus largely a liberation from state control. Given the German frame-work, it took the form of associations in the tradition of the corporatist state. Pay for many of them was low, but their attempt to raise their status as well as income took the form of raising the level of entrance qualifications rather than attempting to gain rights of monopoly. In view of the rapid expansion and modernisation of the German economy at the time, and of the extension of the scientific content of professional knowledge, among doctors, chemists and engineers in particular, this was not an unreasonable attitude to take. Of course, in times of political upheaval and severe economic crisis, voices were also raised for direct limitations of entry. The attitude of the various professional associations to the Nazi regime was ambiguous, and so, it may be not unfairly said, is the author's treatment of them.

There is little use made of primary sources in this study, which is largely based on the secondary literature as well as the printed periodical literature of the professional associations. For this lack, the destruction of most of the archives and the restrictive policy of the remaining ones in the former GDR, are made responsible. However, it is not clear that an interpretative essay of this kind would need new sources, not hitherto accessible to the existing German historiography, to make its contribution. More serious is the fact that the structure of the book, in which the chronological chapters are subdivided into brief accounts of each profession separately, tends to chop up the evidence and prevents discussion in depth of the problems of professionalisation. What emerges is considerable emphasis on the differences as between the German professions and the discussions within each of them, rather than an integration of the history of this key social group into German economic history and the German social and political structure.

University of Sheffield SIDNEY POLLARD

JOHN GILLINGHAM, *Coal, Steel and the Rebirth of Europe, 1945–1955: The Germans and French from Ruhr Conflict to Economic Community* (Cambridge: CUP, 1991. Pp. xv + 397; 4 tables. £27.50).

The collapse of the political and economic order in eastern Europe highlights the durability of the post-war settlement in western Europe. John Gillingham, drawing from a wide range of public archives, demonstrates that this settlement, which initially centred on the Ruhr, represented the culmination of repeated attempts since 1918 by French governments and heavy industry producers to end German domination of Europe. The return of Alsace and Lorraine in 1918 had increased French dependence on Ruhr coal and coke, but it was not until after the Second World War, when the American State Department advocated a solution in the form of an integrated settlement in western Europe, that the Schumann Plan emerged.

Gillingham thus attributes considerable influence to the United States and to the one Frenchman who could act as a conduit for such influence. Jean Monnet is credited with masterminding the modernisation of the French economy and the construction of a political settlement in western Europe based upon sound economic foundations.

But whereas he stresses discontinuity and exogenous factors to explain the success of the French economy he refutes Berghahn's argument that the success of the German economy owed anything to American methods of management. Neither the Allied occupation nor the European Coal and Steel Community (ECSC) which replaced it changed the traditional organisation and strength of the Ruhr industry. Indeed, Britain's support for the policy of industrial dismantling and replacement of elites served to rally the German opposition, both the SPD and the unions, behind a defence of the existing structure of Ruhr industry. The main innovation was in the inclusion of labour in industrial management with the steel industry serving as the model. But if the French policy of institutional reform in the ECSC was initially more successful than British policy, Gillingham argues that the changes introduced by the ECSC were largely cosmetic. Domestic governments and producers retained considerable scope for price fixing within the very generous margins allowed by the High Authority. If the High Authority was more successful in equalising transport rates, then, as now in the single market, it was the harmonisation of taxes which proved to be the most contentious issue. The dispute centred on the German rejection of the partial, sectoral integration theory on which the French had based the intellectual justification for the ECSC. Gillingham argues that, when the French argument that taxation should be at destination rather than at source prevailed, German dissatisfaction was a powerful force behind the move to a more complete integration of the six economies within the Common Market.

The Schumann Plan was proposed at a time of surplus capacity in coal and steel, but when its provisions came into force supply had fallen short of demand. With the rapid growth of the West German economy fuelling this demand, West Germany agreed to continue exporting coal and coke to its partners while importing American coal and coke to meet the deficit. It also agreed to subsidise the inefficient Belgian mines, thereby in both cases retarding the conversion to other sources of energy in the community. Notwithstanding this German policy, a French steel consortium decided in 1954 to buy the former Flick mine – the largest in the Ruhr – which was to supply the coke import requirements of the Lorraine steel industry.

As Gillingham acknowledges, the process of integration in western Europe after the Second World War had a dynamic and rationale which was far greater than that of solving the specific problem of the Ruhr. The connection between the two is left obscure. This is a book about the Ruhr conflict from its origins to its resolution, and not about the European Community.

University of Manchester F.M.B LYNCH

PHILIP ARMSTRONG, ANDREW GLYN and JOHN HARRISON, *Capitalism since 1945* (Oxford: Blackwell, 1991. Pp. xvi + 390. H/b £40.00, p/b £14.95).

This is a revised edition of *Capitalism since World War II*, which was originally published in 1984. The book provides a Marxist interpretation of post-war developments in the major industrialised economies. The cover notes suggest that account has been taken of the recent collapse of the East European regimes. However, those expecting some thought provoking soul searching on this theme will be disappointed. The tone is essentially polemical, and remains hostile towards the market economies. The conclusion reached on p.340 is that 'the regimes of Eastern Europe may yet be seen as having been as much barriers to socialism as to capitalism'. Socialist Utopia remains around the corner, then.

The first two sections on 'Postwar Reconstruction, 1945–50', and 'The Great Boom, 1950–74', have been left largely intact, and only the third section on 'Coping with the Slowdown since 1974' has been substantially rewritten. The basic story is very simple. Growth is driven by investment, which is determined by the profit rate. Hence, post-war history boils down to explaining how profitability was restored during the reconstruction period (thus setting off the Great Boom) and then suffered a setback during the 1970s (thus ushering in the Slowdown). The determination of profitability is in turn discussed within a class war framework. The restoration of profitability during the reconstruction period is attributed to a worldwide attack on the labour movement, led by the United States. However, the success of the boom undermined the conditions for further accumulation, as workers' bargaining power increased in conditions of full employment and investment opportunities dried up. The section on the Slowdown concludes that, despite a series of pro-capital, anti-labour policies pursued during the 1980s, recovery has been very limited.

Even on the basis of the data presented here, the evidence for this view is less than overwhelming. Much of the evidence is presented in the form of graphs and tables for an aggregate of the Advanced Capitalist (G7) Countries, which is difficult to interpret. Aggregation problems would seem to be particularly severe in the construction of the relevant profits and capital series. Where data are provided on a disaggregated basis, they appear to contradict the model as often as they confirm it. For example, on p. 252 it is noted that Japanese profitability has not recovered to pre-1973 levels, but accumulation has, whereas in Europe profitability has been restored to pre-1973 levels but accumulation has remained sluggish. An unbiased observer might take this to be a rejection of the model, but the authors argue that the profit rate might still be higher in Japan than in Europe, although they cannot be sure because the international comparison of profit rates is difficult.

The most glaring omission from an economic historian's point of view is the neglect of the catch-up perspective, particularly given the recent work of Moses Abramovitz. There were enormous opportunities for rapid growth as the other major industrialised countries caught up with the US in terms of productivity levels. Slowdown would be expected once much of the productivity gap had been eliminated. However, the existence of a productivity gap does not imply that catch up will automatically occur, so an examination of barriers to growth is appropriate. However, rather than limiting attention to capital and labour as two homogeneous interest groups, as in this study, it surely makes sense to consider a more fragmented approach to interest groups and their activities in blocking economic change (as suggested by Mancur Olson). Furthermore, the rapid growth of the postwar period suggests that this is not a zero-sum game, but that workers and employers have common interests. At best, then, the class war interpretation is an over-simplification.

University of Warwick STEPHEN BROADBERRY

ALLEN W TRELEASE, *The North Carolina Railroad, 1849–1871, and the Modernization of North Carolina* (Chapel Hill, NC and London: University of North Carolina Press, 1991. Pp. xvi + 486; illus., maps, tables. $37.50).

This detailed monograph tells the story of the North Carolina Railroad, running a distance of 223 miles from Goldsboro, west to Raleigh, Greensboro and Charlotte, from its organisation in 1849 until its leasing by the Richmond & Danville Railroad in 1871. The narrative of these independent years falls into three chronological time-spans bounded by the Civil War, 'Before', 'During' and 'After'. Within each period, the common themes of management, labour, equipment, passenger and freight service are featured. Construction of the road, its role during the war, the debate about selling, merging or leasing and an assessment of its impact are additional areas of exploration. The book is a product of many years of painstaking research. Allen Trelease has not only examined the corporate records of the North Carolina Railroad, but he has used an abundance of other manuscript collections, North Carolina official and railroad publications, other railroad annual reports and an awe-inspiring range of secondary local and railroad publications. Already a well-known Southern historian of the Reconstruction period, he has used his accumulated knowledge to good effect when looking at local and regional issues. Given the relative sparsity and inconsistency of the North Carolina Railroad company records, revealed not so much in the bibliography as in the occasional sentences like 'it is difficult to measure the actual increase in freight because the NCRR did not keep tonnage records' (p. 176) or 'the evidence here is scanty' (p. 425), then this railroad biographer needed to be an established and sound scholar with patience to wade through a range of materials, especially newspapers, for small pockets of information. The end result, however, is history rather than business history or economic history. Certainly the history concerns business and economic matters and reveals acquaintance with theoretical and analytical issues, but it is traditional in style, content and approach.

What areas of interest could the business historian usefully find in this study? Of major importance is the balance between public and private interests in the financing and managing of the railroad. The North Carolina Railroad was largely a state-owned enterprise and was subject to continuing political influence in, a period which is one of the most interesting and unstable in Southern history. Yet with few exceptions the state government adopted a passive role. The development of through traffic agreements in an era of diverse track gauges and small companies operated by inexperienced managers on a shoestring budget gets to the roots of the glowing reports of transportation improvements so frequently found in general textbooks. Indeed the story of managerial minimalism and inept administration is a worthwhile reminder that railroads had an existence prior to devising methods of organisation and procedure. Information on the primarily black labour force offers insights into the non-agricultural unskilled role of both slaves and free blacks. Then there is statistical data covering a variety of subjects like the work force, the locomotive roster, running times and speeds, passenger and freight receipts and expenses. This data may not be as full or as systematic as business historians would like, but it is as full as any historian or economist could realistically hope to obtain. These and many other findings make *The North Carolina Railroad, 1849–1871* an impressive study of the early years of a major means of transport in the economically important Piedmont crescent of North Carolina.

University of Birmingham MARGARET WALSH

MICHAEL J. FRENCH, *The US Tire Industry: A History*, (Boston: Twayne Publishers, 1991. Pp. xvii + 156. H/b $22.95, p/b $11.95)

Tyres are important but unglamorous things, and rather like motorists who all too often ignore their condition, historians are guilty of having done little to chart the development of the tyre industry. Whilst there has been a deluge of literature on the automobile, until now there have only been a few, rather unsatisfactory studies of individual tyre producers like Goodyear and Firestone. Michael French's book is therefore especially welcome, as the first general survey of the American tyre industry.

French starts this compact and well organised study with a brief sketch of the development of tyre technology in the pre-automobile age. He then demonstrates how the industry's history parallels the wider rise and decline of American manufacturing during the twentieth century. From the years around 1900, when pioneering entrepreneurs like Harvey Firestone and Frank Silberling established a world-dominating industry centred on Akron, Ohio, tyre manufacturing expanded dramatically, in line with the growth of vehicle production in nearby Detroit. Depression in the 1930s and the disruptions of war interrupted growth and caused some re-evaluation of strategies and structures, but the long consumer boom of the 1950s and 1960s restored prosperity and confidence to the industry. Since the oil shocks of the 1970s, however, tyre producers have shared the wider malaise of much American industry. Increasingly intense global competition has led to a major shake-out of US producers; with the acquisitions of Firestone by Bridgestone of Japan and of Uniroyal-Goodrich by Michelin of France in the late 1980s, leaving Goodyear (itself subject to a hostile bid by Sir James Goldsmith in 1987) as the only surviving American-owned volume tyre manufacturer.

Despite its comparative brevity, this book manages to address a wide range of issues of interest to business historians. The dualistic nature of the tyre market, split into original equipment (represented by the oligopoly purchasing power of the vehicle makers) and replacements (fragmented and highly competitive), is a theme running throughout the discussion. Tyre manufacturing itself became oligopolistic at an early stage. Between about 1898 and 1911 firms like Goodrich and Goodyear integrated forward into wholesaling; at the same time, scarcity of skilled labour constituted a potential barrier to entry for new firms. Both factors reinforced the dominance of the industry's first movers; a situation reinforced through the 1920s by technological developments which racked up the minimum efficient scale of production. This was reflected not only by declining numbers of tyre firms (166 in 1923 – down to 35 in 1933) but also the increased capacity of the main firms; that of the industry leader, Goodyear, rising from 600 tyres a day in 1909 to 89,500 in 1929. Other themes explored include the role of government, particularly during the Second World War and the drive to develop synthetic rubber, and the multinational spread of the tyre industry, within as well as outside the United States.

This is not a book burdened with too much economic theory; the term 'transaction costs', for example, does not seem to appear at all. However, and perhaps for this very reason, it should prove to be one of the more accessible and intelligible case-studies of issues close to the heart of business history in the post *Strategy and Structure* era. It convincingly discusses aspects of the interplay between market structures, technology, labour, finance, entrepreneurship and business strategies. Amongst other things, it helps answer the intriguing question as to why car makers effectively chose not to integrate backwards into tyre manufacturing (although Ford did briefly operate a plant in Detroit, between 1938 and 1943, before selling the equipment to the USSR). French also provides some salutary qualifications to Chandler's 'visible hand' thesis; arguing, for example, that 'the hectic pace of expansion [in the tyre industry] until 1920 often led to overcrowded factories in which management's coordinating role may have been more effective in theory than in practice' (p. xv). This volume, which includes a useful chronology and bibliographic essay, is a worthy addition to the Twayne 'Evolution of American Business' series.

University of St. Andrews CHRISTOPHER SCHMITZ

DAVID E. NYE, *Electrifying America: Social Meanings of a New Technology* (Cambridge, MA: MIT Press, 1991. Pp. xv + 479; illus. £26.95).

This interesting book is difficult to describe and pigeonhole. It is not a technological history like Thomas Hughes's *Networks of Power*; and, though there is a lot in it about the strategies of the major electrical power generating and equipment manufacturers, it is not a business history in any conventional sense either. Instead, this is a product of the 'American Studies' school of historico-cultural analysis, concentrating on the incorporation of electricity into the fabric of everyday life in the United States. It is about the electrical industry's manipulation of literary and artistic symbols and cultural traditions to win acceptance for the new technologies, and also about the ways in which 'ordinary Americans' came to terms with them.

This is all very fascinating, but the argument which results rests in places on the elegant assertion of the undemonstrable rather than on the kind of evidence business and economic historians are used to dealing with. However, Nye is clearly an extremely clever man, which means that even the sceptical empiricist may feel inclined to give him the benefit of the doubt when he tells us what the meaning of a picture was, or how it was interpreted, or precisely what impact a particular public relations campaign had.

Within the framework of this essay in cultural analysis there is a very useful, thoroughly-researched description of the development of the markets for electrical power and electrical appliances in the United States. The book is organised around the development of these different markets: for illumination, first of all for downtown offices and stores and central business districts; for urban and inter-urban public rail transportation; for driving industrial machinery; for the (urban, primarily middle-class) home; and, finally, for rural America.

In each section, Nye tells us what technology became available, and when, and how long it took to be generally adopted, and why. He does not deal much with the economics of electrification, but there is plenty about its politics – in particular, about the failure of 'municipal socialism' in the provision of electrical power, and about the ideological as well as economic obstacles to rural electrification which kept such a large fraction of the whole population in the dark for so long.

Nye organises his account of the cultural history of electrification around the development of these markets and of the social impact of their associated technologies – explaining, for example, how the streetcar and the inter-urban speeded the process of suburbanisation, creating the preconditions for the preference for individual automobile ownership and the rapid decline of America's efficient systems of privately-owned public mass transit. One curious feature of the book is that he uses as his reference-point the community of Muncie, Indiana, supposed since the Lynds' classic studies to be representative and typical of the wider American experience.

The book is beautifully produced, copiously illustrated, and a bargain at the price.

University of Durham HOWELL JOHN HARRIS

JAMES L. PIERCE, *The Future of Banking* (Yale University Press, 1991. Pp. x + 163. £16.95).

In the past decade banking around the world has taken a buffeting; and US banking in particular has suffered. What brought this about? Is it the nature of the sector; is it the state of the economy; or is it the fault of government? Professor Pierce's analysis is based exclusively on the US and therefore gives a different diagnosis and prescription from what might have been gained from wider-ranging observation. The basic story in this book is that banking is inherently unstable and needs regulating, but that the existing regulation is out of date. In the US the regulation that came with the New Deal in the 1930s sorted out the problems of banking and gave almost 50 years of stability. But economic forces, technology, and financial developments, have all operated to render that regulation inappropriate. New regulation is needed to cope with the new circumstances.

This is a short book and it is admirably clearly written. There are five chapters. The first sets out the problem and gives a brief outline of the proposed solution. The second should be read by anyone who would like a succinct introduction to the principles of banking and finance. The third chapter, which is about a third of the book, is a brief history of banking in the US, with the emphasis on the Great Depression and the New Deal responses to that. Chapter four spells out the nature of the regulation that has been in place for nearly half a century, together with suggestions for reform. The final chapter gives the proposed remedies in more detail.

Most of the history and analysis is unexceptionable, but there is nevertheless some that is disputable, or requires modification, or qualification, and some that needs clarification. There is a strain running through the account that suggests that the government cannot know what is required, that there are too many forces and interested participants at work that will defeat regulators. So far so good. But then the interventionist in the author appears and the argument is made that it is not regulation *per se* that is at fault, but rather the particular regulation. New and extensive regulation is required. This is a pity and it seems to me the trouble arises because of the concentration on US banking. According to Pierce, banks back their liabilities with illiquid and risky loans, and they borrow short term and lend long term. Perhaps, but a different picture would be gained from looking at UK experience. British banks did not behave like that and they were stable. Indeed, British banks have been criticised for not lending long term.

The proposal for providing future stability is that functions not institutions should be regulated. Any firm should be allowed to carry out money services but if it does it should be strictly regulated. The problem with regulation, wherever it is implemented, is that market participants will find ways of beating it (though there may be a lot of resources misallocated in the process). The system proposed would necessitate extraordinarily far-reaching and detailed supervision. Surely a better alternative, and one that is not discussed here, is to let the market deliver its best result and have a lender of last resort that lends to the system (not bail out a particular institution) in times of liquidity pressure.

City University, London FORREST CAPIE

W. DEAN KINZLEY, *Industrial Harmony in Modern Japan: The Invention of a Tradition* (London and New York: Routledge, 1991. Pp. xvii + 190. £35.00).

During the past couple of decades the Japanese model of industrial relations has attracted intense international interest. Japan's industrial success has often been attributed to corporate paternalism, the lifetime employment system and other supposedly unique features of Japanese management; and these features in turn have often been seen as reflecting the survival of Confucian traditions in modern Japanese society. Recently, however, this culturalist interpretation of Japanese management has come in for some well-aimed criticism. Kinzley's study is a useful contribution to the newer critical approach.

Industrial Harmony in Modern Japan is a study of the Kyôchôkai, or Cooperation and Harmony Society: an advisory and mediating group set up on the initiative of the Home Minister in 1919. In essence, the Kyôchôkai was an attempt to find an acceptable technocratic solution to the social problems of industrialising Japan. During the brief and tentative blossoming of unionism and socialist thought in 1920s Japan, the Kyôchôkai emerged as an advocate of 'responsible unionism': that is, of labour organisations which avoided any taint of political and social radicalism. To pursue this end, the Association acted as a mediator in numerous industrial disputes, organised training courses for 'responsible' unionists and issued a mass of educational material, including films illustrating the follies of worker militancy. They also took an interest in wider social issues, and became a pioneer in the establishment of labour exchanges and settlement houses in Japan.

As Dean Kinzley shows, the 'Harmony and Cooperation' of the Association's title were not inate and unchanging parts of Japanese culture, but were cultural symbols which the Association manipulated in their search for solutions to essentially modern problems. The founders of the Kyôchôkai clearly recognised that the paternalism of preindustrial guilds and merchant houses could not be carried on into the modem age, but they were only too willing to make use of notions like paternalism in constructing their own social agenda. Thus tradition was rewritten and adapted to meet the needs of modernisation.

The Kyôchôkai, it should be said, was only one of many bodies which have influenced the development of Japan's industrial relations, and the reader who wants a comprehensive picture of the 'invention' of industrial harmony would need to read this in parallel with other studies like Andrew Gordon's *The Evolution of Industrial Relations in Japan*. Kinzley's attempts to distinguish the position of the Kyôchôkai from that of business lobby groups like the Industrial Club seem a little forced. In the end, the Association not only acquiesced in but actively supported the suppression of independent unionism in Japan: a suppression which was only reversed after Japan's defeat in World War II. The book would also have benefited from a somewhat more detailed attempt to assess the long-term impact of the Kyôchôkai and its members on Japanese managerial ideas (particularly since a leading member of the Association – Yoshida Shigeru – was to become Japan's most powerful politician in the immediate post-war period). These limitations aside, however, Dean Kinzley's book offers an interesting insight into an important and relatively neglected area of Japan's inter-war economic and social development.

University of New England TESSA MORRIS-SUZUKI

BARRIE DYSTER and DAVID MEREDITH, *Australia in the International Economy in the Twentieth Century* (Cambridge and Sydney: CUP, 1990. Pp. xvi + 362. H/b £39.50, p/b £15).

Dyster and Meredith have produced a well-packaged economic history of Australia since the establishment of the Commonwealth in 1901. The book is divided into four chronological sections, each of which is prefaced by a 10–15 page introduction to general trends in the world economy. In a sense, however, the title is misleading because *Australia in the International Economy* also covers a wide range of domestic issues. To be sure, international events must have a central place in the economic history of a nation so heavily dependent on foreign trade, but Dyster and Meredith have not attempted an artificial separation of international and domestic developments. The overall result is a generally pleasing synthesis.

Although there is some scholarly apparatus, particularly in the source notes, the book is in fact a general text aimed at first- or second-year undergraduates and should be judged on this basis. The basic treatment of issues is not heavily analytical, but the concepts that are used are presented clearly and without jargon. Fortunately, Dyster and Meredith have avoided the schematic and ahistorical approach of some recent books in favour of a balanced and readable narrative. The 'story', however, is backed by a strong numerical emphasis. Taken together, the tables and diagrams of relevant data that are presented in almost every chapter provide a reasonably comprehensive statistical summary of Australia's economic development from 1860 to the late 1980s.

The ideological slant is somewhat to the left, with perhaps more emphasis than some scholars would like on the losers in the development process. For the most part, however, the narrative clings to the middle of the road and is unlikely to offend many readers.

Australia in the International Economy is of little specific interest to business historians. While the growth of the manufacturing and service sectors is covered in detail, individual businesses and entrepreneurs are rarely mentioned. But, as a readable introduction to the economic history of Australia, the book easily surpasses such rivals as W. A. Sinclair's *The Process of Economic Development in Australia*.

University College,
University of New South Wales PAUL L. ROBERTSON

E. ABE and Y SUZUKI (eds.), *Changing Patterns of International Rivalry: Some Lessons from the Steel Industry* (Tokyo, University of Tokyo Press, 1991. Pp. xiii + 315, ¥6,800).

This presents the proceedings of the International Conference on Business History 17 (The Fuji Conference) held in January 1990. There are nine substantive chapters dealing with case studies in Britain before 1914, the USA in the late nineteenth century and since the Second

World War, nineteenth-century Germany, twentieth-century France, Belgium and Luxemburg, pre-war and post-war Japan and the recent developments in South Korea. Each paper also has brief and illuminating comments appended. There is an excellently clear historical introduction by Suzuki as well as useful concluding remarks by both editors. These help to give an overall structure to the collection which, as a result, is less diffuse than such editions often tend to be.

With so many different contributors it is difficult to trace a common thread of argument but the editors have managed to establish a reasonable intellectual framework. The iron and steel industry is a staple, a basic industry to industrial development. At times different states have been dominant: Britain for most of the nineteenth century, then succeeded by Germany and USA (as steel increased in importance over iron). After the Second World War Japan became dominant internationally (though in terms of output the USSR was leader for a time) and in the last 20 years has seen her position in turn threatened by the rising star in Korea. The book is intended to explore explanations for these changes.

Introductory remarks stress the time honoured point about a decline of entrepreneurship and innovation in both the UK after 1870 and USA after 1950. These assertions, or assumptions, are challenged, however, in the detailed papers: Steven Tolliday on the UK, Paul Tiffany on the USA. So often inadequate entrepreneurship is a residual explanation for real or relative decline. 'Latecomers', in the context of the late nineteenth century – i.e. Germany or USA – or since the Second World War – Japan or Korea – have the advantage of being able to adopt modern technology. But not all latecomers have been successful, which brings us back to entrepreneurship. For it is entrepreneurship which determines the commercial response to objective market or technological opportunities.

Perhaps it is more appropriate to focus on the far-sightedness of entrepreneurs in the 'dynamic' sectors – nineteenth-century Germany or USA, post-war Japan. The specialist contributors validate these points but not in isolation. Rather, they stress the objective market or political circumstances which benefited so-called 'latecomers'. The German industry was aided by a unique system of domestic cartels as well as by protective tariffs and long term investment from the banks. These are well known. Much less interest was displayed by bankers in France in the 1920s. Most investment came from accumulated profits. These in turn were secured by high levels of protection (including that produced by the International Steel Cartel of 1926), government grants and defence contracts. In Japan the industry grew rapidly, before the First

World War, partly on the basis of government subsidy and defence industry contracts. In post–1945 Japan the real boom was once again aided by the state in the form of cheap credits, tax concessions and the guiding hand of MITI, as well as individual entrepreneurial brilliance. On the other hand Tiffany maintains that poor co-ordination between government and industry was a major factor in the relative decline of the American steel industry after 1950.

There is clearly no simple answer to complex questions of economic and commercial fluctuations. This collection is helpful in our understanding because of the thoroughness and detail of the contributions. They underline the danger of slipping into a deceptively easy monocausal explanation of commercial shortcoming. This example also shows how outstandingly successful capitalist industries have been helped along by direct or indirect governmental assistance.

University of East Anglia ROGER MUNTING

H. JAMES, H. LINDGREN and A TEICHOVA (eds.), *The Role of Banks in the Interwar Economy* (Cambridge: CUP, 1991. Pp. xii + 277. £25).

The articles appearing in this volume were first presented at a session bearing the same title during the Tenth International Economic History Congress, held in Leuven in August 1990. The principal aim of the book is to examine how the financial system – and in particular banks – in different countries responded to the crises that bedevilled the world economy between the wars. The strength of this volume lies in the economies which have been selected for discussion: much of the existing debate surrounding the role of banks has tended to concentrate on larger industrialised nations, whereas several of these papers provide important insights into the experience of smaller countries such as Greece and those in Scandinavia and Central Europe. Much of this volume should therefore prove of interest to business historians.

An interesting feature of these papers is that they demonstrate great diversity in the scale of industrial investment by banks in various countries. They also indicate that similar banking systems may have had quite different ramifications as far as the ability of the various economies considered to withstand financial crises was concerned. The implication of these studies is that no single banking system could have provided all economies with adequate protection against the difficulties of the inter-war years. It would have been useful, however, if these points could have been made in a concluding chapter, which could have assimilated into a more general argument some of the observations of the detailed country studies which form the greater (and most interesting) part of the book.

A dominant theme running through this volume is the relationship between banks and industry. Several papers examine the extent to which banks provided businesses with long term capital, and question whether this industrial investment increased the vulnerability of both the banking system, and the economy in general, to financial disturbance. This theme of industrial finance is examined in the broader context of the political and legislative conditions prevailing in the economies considered. Space permits an outline of only a few of the contributions as illustration of the diversity of banking experience already noted. Larsson's chapter concentrates on the close association between Swedish banks and industry, and demonstrates that as a consequence of this relationship, economic difficulties arising from rapid deflation after 1920 affected both sectors, forcing the state to tighten bank legislation. The following chapter, by Vanthemsche, extends this theme by contrasting the experience of Belgium and the Netherlands. Like Sweden, Belgian banks were heavily involved in industrial investment before the war, and continued this policy after peace was declared. However, Belgian banks dominated Belgian industry to a greater extent than in Sweden. Vanthemsche suggests that this eased the passage of Belgian industry through the deflationary period of the 1920s, but also provided little incentive for change. The economic stagnation which resulted left Belgian staple industries ill-prepared to meet the more severe depression of the 1930s. By contrast, Dutch banks became increasingly cautious in their industrial policy following the difficulties they experienced during the 1920s, and therefore the financial crises of the 1930s were less rapidly transmitted to the Dutch industrial sector. Mazower's chapter on Greek economic development presents yet another form of financial institutions. Mazower portrays the Greek banking system as relatively unsophisticated, with the result that industry was largely self-financing and monetary policy was ineffective. He argues that as a result the Greek economy was insulated to some extent from the impact of the 1930s financial crises, but that by doing so it also protected the Greek system from the need to confront change, which had been forced upon many European economies. Mazower suggests that ultimately this inertia proved damaging for the development of the Greek economy.

The chapters by Mosser and Teichova and by Boross are also based around the theme of industrial finance, but provide more specific evidence of the relationship between banks and industry in Austria and Hungary respectively by detailed analysis of archival evidence drawn from joint stock company balance sheets, Austrian Ministry of Finance

Archives, and a case study of the Commercial Bank of Pest. These papers provide business historians studying any country with a clear reminder of the benefits that can be gained from exploiting such records.

Lack of space in this review forces the reluctant omission of any discussion of the informative papers on Germany, Italy, Canada and Japan. However, the chapter by Kunz on American bankers and Britain's fall from gold cannot be ignored. Although it sits somewhat awkwardly in this volume as an analysis of how international conditions may affect domestic policy, it should be recommended to any student as a clear discussion of the period leading up to Britain's departure from the gold standard, which in a concise and accessible way adds to the traditional explanation of these events.

Nuffield College, Oxford KATHERINE WATSON

TIM UNWIN, *Wine and the Vine: An Historical Geography of Viticulture and the Wine Trade* (London: Routledge, 1991. Pp. xvi + 409; illus; maps. £40.00).

It is not entirely clear whether writing a history that spans the years 8000 BC to 1990 AD in a single volume of 11 chapters, and which crosses traditional disciplinary boundaries of scholarship, is an act of great courage or total foolhardiness. The risks are obvious: a level of superficiality and generalisation that exposes the author to the nitpicking criticisms of a horde of specialists, an academic plague equivalent to phylloxera vitifoliae. Never having met Tim Unwin, I have no idea whether he is courageous or foolhardy, but his book shows him to be enthusiastic, passionately interested in his subject, extremely well read and possessing an acute eye for the way his subject relates to wider historical themes. The result is a book that fills a major gap in the history of the drink trades (particularly in the English language) and which should satisfy the generalist and the specialist alike, one that will be appreciated by wine buffs as much as by historians seeking a quick guide to the political and economic significance of the Anglo-Gascon wine trade in the fourteenth and fifteenth centuries or the role of the wine trade in nineteenth century economic crises.

Unwin adopts a global perspective (or at least those parts of the globe where climate and soil make viniculture possible) and by doing so rescues his subject from the Eurocentricity which has dominated most previous studies. The spread of viniculture to Latin America, southern Africa, Australia, New Zealand and California produced important changes in cultivation methods, wine making techniques and marketing.

Business historians with a taste for wine should enjoy all of the book; those with duller palates may concentrate on chapters nine and ten which deal with the restructuring of viniculture in the nineteenth century and the dominance of capital in the twentieth century. In an interpretation informed by Cavanagh and Clairmonte, rather than Chandler, Unwin shows how the wine industry has been characterised by increasing vertical integration and ultimately the dominance of a handful of global corporations. The march to oligopoly occurred later in the wine industry than in beer and spirits mainly because greater variability in yields made it difficult to guarantee adequate supplies and standard qualities for mass marketing. This theme is illustrated through changes in the British retail wine trade, in particular the rise of International Distillers and Vintners whose main objective was to build international brands, including a rather undistinguished table wine, Piat d'Or, which was launched in 1979/80 and by 1984/85 had become the largest single table wine exported from France. Tastes, part of the great *ceteris paribus* of elementary demand theory, have become infinitely malleable and different segments of the market, not least female drinkers, targeted with precision accuracy. How else could a product which the ancients saw as a gift from the gods, and imbued with great symbolism, have ended up being consumed in a 'bag-in-the-box', a package which accounted for no less than 60 per cent of the entire Australian retail wine market in 1984?

University of York RON WEIR

MICHAEL FREEMAN, *Atlas of the World Economy* (London: Routledge, 1991. Pp. xv + 167; illus; maps. £40).

Eight aspects of the post-war world economy are highlighted in this study in separate chapters on population, agriculture, energy, industry, national income, transport and trade, labour, and multinationals. Drawing primarily upon data collected by the United Nations, the World Bank and the International Labour Organisation, Freeman provides a statistical guide in the form of maps, graphs and tables supported by brief textual comments. Each chapter is wide-ranging; the first, on population, looks at world demographic growth, regional and national experiences, the structure of population, the problems of excessive growth in the developing countries and urban expansion. In a remarkable act of conciseness, repeated in each of the subsequent chapters, all of these themes are condensed into 16 pages which includes just four pages of text.

Unfortunately, the exercise falls down in one important way: while there are many interesting illustrations, the text is too brief and oversimplistic. In the chapter on energy, for example, well rehearsed comments on the rise and decline of OPEC and the inherent problems of nuclear power must already be apparent to even the most general of readers. If the book is intended for those with almost no previous knowledge of the post-war economy then the ideas of Rostow or Malthus ought not to be alluded to without some explanation. Elsewhere more specific issues are addressed but sometimes incompletely: discussion of the factors of production in agriculture, for example, says nothing of fixed capital despite the importance of agricultural machinery since 1945.

The geographical coverage moves extensively over western nations, socialist economies and third world countries inspite of the unreliability of the data from the latter two groups which sometimes makes comparisons difficult. While sectoral coverage is reasonably comprehensive, the work may have been improved by a separate chapter on services particularly in the light of their rapid postwar expansion. Instead, they are dealt with very briefly in subsections of transport, multinationals and national income. Nor does there appear to be room for pastoral agriculture or the food processing industries although the motor industry is featured in two separate chapters. An index would have been a valuable addition to a book which is presumably designed to be used as a reference source.

While Freeman should be praised for reproducing a range of data in an accessible, attractive and easily understandable form, it would, nonetheless, be difficult to support the contention of the consulting editor, Derek Aldcroft, that it, 'provides an excellent introduction to the global dimensions of economic activity' (p. xiv). Business historians, in particular, will not find much that is new here and, with an essentially macroeconomic approach, there is little about the changing structure and organisation of firms.

Australian National University SIMON VILLE

ADELE HAST (ed.), *International Directory of Company Histories, Volume III* (Chicago and London: St James Press, 1991. Pp. xiv +857. £80).

This is the third volume in a series which continues to provide a valuable reference source on international big business. The general format is maintained: each entry provides basic factual information on the history of the company and a survey of its recent performance and activities. To qualify for entry, a company must have minimum annual sales of $2 billion or, in the case of insurance companies, minimum assets of $10 billion, both in 1989–90. A few small companies are included because of their special significance in their respective industries or geographic allocations and this includes a few state-owned corporations.

In particular respects there are changes from the previous two volumes. Volume III has been produced with the assistance of advisers, included among whom are such distinguished business historians as T.C. Barker and Alfred D. Chandler, Jr. Unlike in earlier volumes, each entry is signed and there is an appendix providing notes on individual contributors. And possibly because of the amount of material which has had to be included, the typeface has been reduced. The index is cumulative.

Health and Personal Care Products, Health Care Services, Hotels, Information Technology, Insurance, and Manufacturing and Materials are the categories covered. All the well-known names are here. Your reviewer finds it ironical, nevertheless, that one of the very few UK firms listed under manufacturers (and one of the biggest in the category) should be Hanson plc. Moreover, the dominance of US companies in the list is obviously a reflection of US corporate structure and thus should not be taken as an index of comparative international economic performance. Indeed, the series is a reflection of the importance of big business; at the same time it is not direct testimony to an outstanding contribution by big business to economic efficiency and performance.

University of Bristol B W E. ALFORD

DANIEL TODD, *Industrial Dislocation: The Case of Global Shipbuilding* (London: Routledge, 1991. Pp. vi + 292. £45).

Daniel Todd has made an ambitious attempt to chart the development and contemporary experience of the world shipbuilding industry. The volume opens with an excellent review of current shipbuilding, with a description of the changing balance of power over the last 30 years – the decline of the UK industry, the rise of northern European building and then Japan; and in turn the decline of these new centres as Newly Industrialised Countries – notably Korea – broke into the shipbuilding market. This is followed by a chapter on the impact of the 1973 oil crisis on world shipping and the inevitable consequences for shipbuilding – massive government support in Western Advanced Industrial Countries and, when that was withdrawn, brutal rationalisation paralleled by large-scale reductions in Japan. The only sector in AICs to escape severe pruning was warship building. Daniel Todd argues that the maturity of the industry, reflected in the lack of opportunity for technical and hence cost-saving advances, allowed the NICs, with government support, to break into shipbuilding despite the severity of the recession. He goes on in the next chapter to discuss the structure of the world industry following this painful period of re-adjustment, describing the extensive and complex corporate linkages of the Japanese yards and their Korean counterparts and contrasts these with similar horizontal and vertical linkages made by British shipbuilders in the 1920s with eventual disastrous consequences. There follow two chapters which examine diversification, mostly into other branches of heavy engineering, and the nature of integration using both contemporary and historical examples. He ends with an examination of four NICs' experience in encouraging new-entry shipbuilding and marine engineering as a means, whatever the cost, of effecting rapid technical transfer from AICs – Brazil, India, China and Taiwan. His overall conclusion is that, despite the massive structural changes that have occurred in the last 20 years, there can be no 'optimism concerning a permanent end to the industry's woes'.

Given the scale of the task he set himself, Daniel Todd can be forgiven if at times he falls short on analysis. His biggest problem is the difficulty of achieving any real measure of profitability, when so many shipyards are contained within large conglomerates and contracts benefit from a multiplicity of both open and discreet state and internal subsidies. His correct approach of looking at historical experience to inform contemporary action assumes, perhaps too readily, that like is being compared with like – which is certainly not the case with almost the total eclipse of passenger ship building (apart from ferries and cruise liners) in the early 1960s. His review of warship building also fails to take account of the toughening of the contractual arrangement for defence work with western governments in the last 20 years, making it a much less attractive alternative than in the past. The reader is also left wondering why conglomerates appear to work in a Japanese context when they have so notably failed in western countries – particularly the United Kingdom. Taken as a whole this is a good book which deserves to be repeated for other sectors if there are authors brave enough to amass such a comprehensive knowledge as Daniel Todd.

University of Glasgow M.S. MOSS

FORREST CAPIE and GEOFFREY E. WOOD (eds.), *Unregulated Banking Chaos or Order?* (London: Macmillan in association with the Department of Banking and Finance, City University Business School, 1991. Pp. xxiii + 251; £40).

This book contains the papers and prepared discussions of a conference hosted by the Midland Montagu Centre for Financial Markets of the City University Business School. In their introduction the editors pose two questions: 'Is there a role for bank regulation? And is a lender of last resort necessary?' (p. xxii). In their view – and in those of some but not all of the contributors – 'regulation seems to bring very few benefits, and is costly' (ibid.). The answer to the second question is less clear-cut. Several of the participants believe that a lender of last resort is necessary, although some pointed out that institutional innovations such as nationwide branching could reduce the need for one.

In 'Are Central Banks Necessary?', Charles A.E. Goodhart, former Chief Adviser to the Bank of England, answers his own question in the affirmative, although not for the usual reasons. In his view central banks are necessary as lenders of last resort. In his comments Geoffrey Wood suggests that it might be desirable 'to move to an inferior but less expensive substitute' (p. 34).

In Chapter Two, Lawrence H. White, the author of *Free Banking in Britain* (1984), rebuts the critics of his thesis that Scotland had a true free banking system before 1844, and concludes that 'from 1810 to 1844 . . . the traditional free-banking model is valid for understanding the Scottish banking system' (p. 59). At least one of those critics, Charles W. Munn, is not convinced.

Hugh Rockoff distils 'Lessons from the American Experience with Free Banking' (c. 1840–60), and concludes that 'the free-banking system embodied a number of desirable features . . .which are well worth adopting today'. (p.103). His discussants, James A. Dorn and Anna J. Schwartz, generally agreed with him.

In the most original chapter in the book, Eugene N. White details the little-known 'Experiments with Free Banking during the French Revolution'. At a time when the government was flooding the country with irredeemable *assignats*, dozens of *caisses patriotiques* issued small-denomination banknotes that circulated side by side with (or in exchange for) the *assignats*. Although they were well-accepted by the public, Napoleon's need for financial support led him to put an end to the experiments by creating the monopolistic Bank of France.

Kevin Dowd traces 'The Evolution of Central Banking in England, 1821–90', the period in which the Bank of England gradually assumed the responsibilities of a central bank. In the immediate pre-World War I period the British banking system differed from the present in two major respects: the commitment to the gold standard, and the freedom of deposit banking from regulation. Dowd insists that 'it was these principles that made the British banking system then more stable than it is today' (p. 184).

In the final chapter, 'Does Bank Regulation Produce Stability? Lessons from the United States', George J. Benston reaches the 'general conclusion . . . that regulation tends to be destabilising because diversification is restricted, profitability is reduced, and risk-taking is encouraged. . . . While supervision is necessary, it generally has not been adequate' (p. 207).

The revival of scholarly interest in free or unregulated banking is an interesting intellectual phenomenon. Is it likely to be followed by practical proposals for legislative action? Don't hold your breath.

Emory University RONDO CAMERON

BOOKS RECEIVED

KERSTI ULLENHAG (ed.), *'Hundred Flowers Bloom': Essays in Honour of Bo Gustafsson* (Uppsala: Acta University UPs, 1991. Pp.xiii + 217. No price).

HECTOR LINDO-FUENTES, *Weak Foundations: The Economy of El Salvador in the Nineteenth Century, 1821–1898* (Berkeley: University of California Press, 1991. Pp.251. $34.95).

JONATHAN R. HUGHES, *The Government Habit Redux: Economic Controls from Colonial Times to the Present* (Princeton: Princeton University Press, 1991. Pp.271. £29.95).

MICHEL MARGAIRAZ, *L'Etat, les finances et l'économie: Histoire d'une conversion, 1932–1952* (Paris: Comité pour l'histoire économique et financière de la France, 1991. Pp.xvi + 1476. No Price).

MINISTERE DE L'ECONOMIE DES FINANCES ET DU BUDGET, *Etudes et documents II* (Paris: Comité pour l'histoire économique et financière de la France, 1991. Pp.vii + 582. No price).

RICHARD PASCALE, *Managing on the Edge: How Successful Companies use Conflict to Stay Ahead* (London: Penguin, 1991. Pp. 350. £7.99).

FRANCIS KINSMAN, *Millenium: Towards Tomorrow's Society* (London: Penguin, 1991. Pp.294. £6.99).

PETER SPRENT, *Management Mathematics: A User Friendly Approach* (London: Penguin, 1991. Pp.426. £8.99).

BARBARA L. SOLOW (ed.), *Slavery and the Rise of the Atlantic System* (Cambridge: CUP 1991. Pp. viii+355).

BURTON G. MALKEIL, *A Random Walk down Wall Street* (London: W.W. Norton, 1991. Pp.440. £10.95).

CAROL R. WILSON, *The World Bank Group: A Guide to Information Sources* (New York: Garland Publishing Inc., 1991. Pp. xvii + 322. $45).

YVES BOURDET (ed.), *Internationalization, Market Power and Consumer Welfare* (London: Routledge, 1991. Pp.xvi + 363. £45).

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British Business and the African Trade: Richard & William King Ltd. of Bristol and West Africa, 1822–1918 — *Martin Lynn*

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Fire Insurance and the British Textile Industries during the Industrial Revolution

ROBIN PEARSON

University of Hull

This paper examines, for the first time, the entrepreneurial, financial and organisational impact of fire insurance on the development of Britain's major textile industries during the Industrial Revolution. From a detailed study of insurance records, and from calculations of amounts insured on mill property over the period 1790–1830, it is concluded that the financial burden of insurance was small, and largely outweighed by the aggregate sums paid back to the textile industries in claims. It is argued, however, that the diversification of textile entrepreneurs into fire insurance, particularly after 1815, soon resulted in a more expert and stringent underwriting of mill property. This in turn had a significant impact on the physical organisation of textile production during this period of rapid growth.

The impact made by the textile manufactories of the late eighteenth century, with their large volumes of combustible stock and novel modes of production organisation, on Britain's largest fire insurers, has been well documented in the three official histories of the Sun, Royal Exchange (hereafter REA) and Phoenix companies.[1] The impact of insurance on the development of the British textile industries has received less attention, which is remarkable given the work done on the role of other important services such as transport and banking during the Industrial Revolution.[2] Despite the attention given to the leading trio of London insurers, the subject is best approached by a study which moves beyond the confines of company histories and examines the regional markets for industrial insurances and the role of provincial fire offices specialising in these markets. This paper presents the initial results of such a study. From an analysis of the records of seven large fire offices in Britain, accounting for over 55 per cent of total sums insured in the third decade of the nineteenth century, and from a detailed examination of the two most important northern insurers, Manchester Fire & Life Assurance Co. (hereafter MFLAC) and Leeds & Yorkshire Assurance,

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conclusions are drawn about the impact of fire insurance on the growth of textile manufacturing between the 1790s and 1840s.

Three areas of impact can be identified. First, there was some influence on entrepreneurial activity. Apart from reducing the danger of financial ruin through loss by fire, insurance companies also offered industrialists opportunities to diversify their interests through shareholdings or directorships. This in turn affected the quality of industrial underwriting. Secondly, there were direct financial costs and benefits in the form of premiums and duty paid on policies, and claims payments received upon losses. Thirdly, underwriting practice could determine the materials and design of mill, warehouse and workshop construction, and help shape the organisation of textile production itself. Each of these areas will now be examined in turn.

I

The growth of fire insurance outside London offered several groups of provincial industrialists and merchants opportunities to diversify, both as shareholders and managers, into a financial service with which they were increasingly familiar. There may have been important cotton interests in two offices established during the 1770s at Liverpool and Manchester,[3] and other textile regions also witnessed the foundation of local fire offices in the late eighteenth century. Twelve of Norwich's leading worsted merchants and manufacturers, for example, were among 81 directors of Norwich General Assurance appointed between 1792 and 1821.[4] Local textile capital was even more significant in the boardrooms of the Leeds and Manchester offices of 1824. Eighteen of the first 24 directors of Leeds & Yorkshire were engaged in wool textiles, being mostly merchants who were leading members of the Tory-Anglican oligarchy which ran the town before municipal reform. The establishment of MFLAC has been analysed in detail elsewhere, but some of the relevant findings may be summarised here.[5] Occupations traced for 53 of 66 directors between 1824 and 1843 show that 46 were employed in the cotton industry. Almost all lived in or near Manchester. Rateable values for the commercial property of 15 of the first 38 directors appointed, placed them in the wealthiest eight per cent of Manchester's business community.[6] Several belonged to a youthful second generation of established local cotton families, and were woven into a 'Byzantine network' of intermarriage and business partnerships.[7] A web of interlocking political, social and cultural activities reinforced this shared economic background.

Both offices also included important textile interests among their proprietors, many of whom were active in local shareholders' committees, supervising groups of agencies. The locations of 440 Leeds & Yorkshire shareholders can be identified, who together held 3,645 of the 10,000 shares issued. The great majority, 362, resided in Bradford, Halifax and Wakefield, which each subscribed about £10,000 in 1824–25, with other towns such as Dewsbury, Doncaster and Pontefract paying about £1,000 each.[8] The Leeds board held a considerable number of shares in reserve, so that the Yorkshire woollen towns, together with Leeds itself, contributed the bulk of share capital.

MFLAC's proprietorship also displayed impressive regional and industrial concentrations.[9] An analysis of the first 642 shareholders shows two-thirds to be textile merchants and manufacturers. Nearly three-quarters of all shareholders were resident in the north-west, with clusters in Glasgow and Liverpool, where dozens of merchants and cotton brokers took up shares, and also in Leicester and Nottingham, where hosiery and lace manufacturers were prominent among shareholders. The structure of MFLAC's proprietorship and agency network – 68 per cent of all agencies in 1829 were located in the north and midlands – and the industrial concentration of the company's insurances – 34 per cent of premium income between 1824 and 1832 came from cotton mills alone – were to a considerable extent the product of the business contacts of the board. Indeed, the board explicitly underlined the advantages of its own industrial expertise as the 'best safeguard' of profitable risk selection.[10] Within a decade, MFLAC became the third largest provincial fire office, and the second largest insurer of cotton mills in the country.[11]

It would be helpful to know whether northern textile capital was disproportionately invested in fire insurance during this period, but this cannot be established without extensive further research into the level and distribution of total capital in these regions, something beyond the confines of this paper. There is no doubt, however, about the absolute importance of textile interests in the Leeds and Manchester offices. As will be shown in part III below, the diversification of these textile entrepreneurs in Yorkshire and Lancashire into fire insurance brought substantial refinements to the underwriting of industrial risks, which in turn had significant implications for the organisation of textile production itself.

II

In 1802 only about 37 per cent of the total insurable property in Britain and Ireland was insured.[12] Sums insured on property, however, rose almost sixfold between the mid-1780s and the early 1840s, with the fastest growth in money terms occurring during the Napoleonic wars and the 1830s, and rapid growth in real terms occurring during the post-war decade. It is exceedingly difficult to estimate to what extent this growth reflected an increase in industrial insurances. Only Phoenix has left a comprehensive account, beginning in 1810, of its domestic insurances. For earlier periods and other offices we have to reconstruct the volume of textile property insured from snippets of information and scattered statistical observations.

Insurance estimates of textile property nationwide exist only for the cotton industry. From agents' returns to the three leading fire offices, Sun calculated the number of cotton spinning mills in 1797 to be 'about 900, and valued at about £2.5m for the buildings and machinery'. It is not clear whether these were all insured; however, their value represents 72 per cent of Chapman's estimate of total fixed capital in the industry at the time.[13] Before 1800 the three leading London fire offices did the bulk of their business in the metropolis, but also captured a large share of the market in at least some textile districts. In 1795 Sun and REA insured 15 of 22 mills in Oldham and 20 of 23 cotton mills in Stockport, while 42 of 63 Scottish cotton spinning firms had policies with Sun.[14] Elsewhere, coverage by these firms was less comprehensive. Chapman, for instance, identified 121 mills in the Midlands for the period 1770–1803, but found Sun and R.E.A. policies for only 47 of them.[15] Generally, from the limited evidence we have, it seems that a large proportion of textile property was insured by the late 1790s, mainly in the three principal London offices, but that this varied considerably by region, from more than 70 per cent of mill property in Scotland, the larger textile towns of northern England, and parts of the south-west, to less than 40 per cent in the Midlands and East Anglia. It is almost certain that the proportion of textile property insured by these offices rose to its highest level in the late 1790s, when their aggregate share of the national market also peaked.

From the 1790s textiles proved increasingly troublesome for the metropolitan insurers. Frequent mill and warehouse fires meant that often premiums failed to cover losses. The extension of some manufacturing activities into cotton warehouses, the increasing size and density of industrial plant in urban locations, and the expansion of multiple occupation, all complicated the underwriting of textile risks. Moreover, in the 1800s, and again after 1815, the largest London insurers faced a rising tide of competition in provincial markets, and a decline in their market share. By the 1820s textiles were, therefore, more widely dispersed among insurers than previously. Estimates of the sums insured on cotton and wool textile mills by seven leading offices during the 1820s are presented in Table 1. These offices together accounted for 57 per cent of the provincial insurance market in England and Wales by 1831/32. Three other important textile insurers for which no internal company data have survived – County, West of England, Leeds & Yorkshire – together accounted for another 15 per cent of sums insured outside London.[16] It may be assumed that the proportion of the cotton insurance market enjoyed by these companies was at least in the same proportion as their share of the total provincial market. This is a fairly conservative assumption given the profile of these offices in northern England, as reflected in the records of rival offices and in the local press. Grossing up the total for cotton in Table 1 by 20 per cent for the business of all other offices produces an annual average of £4.36m insured on cotton mills in the 1820s. Similarly, the total in Table 1 for wool textile mills may be adjusted by 15 per cent for County and West of England offices, and by an estimated £1.04m insured by Leeds & Yorkshire in the West Riding, to give an total of £2.95m insured annually in the wool textile industry in the late 1820s.[17]

To provide a basis for comparison between the industries, the existing capital estimates also require adjustment. Chapman and Butt's figures for total capital in the cotton industry may be reduced by 38 per cent to produce an annual average fixed capital in the factory spinning and power weaving branches of £8.28m in the 1820s.[18] The wool textile estimates of Jenkins, who adopts a much narrower definition of fixed capital, may be grossed up by 20 per cent to allow for 'insured stock', (included in the cotton estimates), and for some fixed capital in finishing workshops which fire offices may have included in their wool textile mill insurances.[19] This produces an estimated annual average capital in wool textile mills in the 1820s of £3.03m.

These figures suggest a considerable degree of under-insurance and non-insurance during the cotton boom of the 1820s, and a decline in insurance coverage since the 1790s. From 30 per cent of uninsured capital in cotton in the mid-1790s, the growth of the cotton industry appears to have considerably outstripped the capacity of the insurance industry, so that almost 50 per cent of capital remained uninsured some 30 years later. By contrast, the factory branch of the more slowly growing wool textile industry remained fairly comprehensively insured throughout the period. Only from the end of that decade, as losses on woollen mills increased rapidly and as many fire offices suspended wool textile insurances, was the proportion of total mill capital insured likely to have fallen substantially.[20]

If it is difficult to estimate the proportion of textile property insured, it is equally difficult to calculate the costs of this insurance. At contemporary rates of premium and duty, estimated cotton mill capital in 1795, if all insured, cost about £42,000, or 0.57 per cent of value added in the industry.[21] Our estimated annual average sum insured in cotton mills during the 1820s cost about £37,000, or just 0.14 per cent of value added.[22] A similar exercise may be carried out for wool textiles. If mill capital was nearly fully insured at the beginning of the nineteenth century, as suggested above, Jenkins' estimate of £0.911m in 1805 cost £8,000 in premiums and duty, or a tiny 0.06 per cent of value added.[23] Our estimated annual sum insured in the 1820s at contemporary rates cost £20,000, or 0.12 per cent of value added.[24]

The above figures suggest that, while the absolute volume of sums insured in the cotton industry grew in money terms by about 47 per cent between the mid-1790s and 1820s, the proportion of mill property insured fell, and the total cost of insurance declined both absolutely, and relative to the value of output. On the other hand, while insurance rates on wool textile mills fell over the period, they did not keep pace with declining real output, and the relative burden of insurance on both industries converged.

Table 2 indicates how the wartime rate of growth in the cost of raw cotton almost mirrored the rate of fall in mill premium levels, while during the post-war deflation the fall in raw material prices outstripped the decline in premium rates. If the total insurance burden on the cotton industry fell across the whole period, it seems to have fallen during the war as a result of declining premium rates, but after the war it was principally as a result of the failure of insurance to keep pace with the mill building and mechanisation associated with the expanding volume of trade. In wool textiles the situation was similar before 1815, but after the war, as the cost of raw wool slumped, mill premium rates rose very substantially, while many insurers began withdrawing from the market. By the late 1820s, owners and tenants of wool textile mills were finding insurance cover relatively more expensive and more difficult to obtain, than they had experienced in the previous two or three decades.

Overall, the estimates suggest that the total cost of fire insurance to the major textile industries was very low throughout the period. The cost to individuals who fully insured their property, however, could be rather heavier. A Glasgow cotton spinner, for instance, whose mill was insured for £15,000 across seven offices in 1826, probably paid about £120 a year in premiums and duty. Benjamin Gott paid £250 annually to cover his woollen mill complex at Bean Ing in the 1820s, which represented about 30 per cent of the mill's enormous weekly wage bill, or about one and a half per cent of the total annual income from the mill.[25] For smaller manufacturers, the annual cost of insurance was probably the equivalent of one or two weeks' wage bill.[26] However, supplementary charges for 'additional risks' such as unenclosed lights and pipe stoves, could substantially push up the insurance burden, even on smaller mills.[27] Although fire offices had always charged extra premiums for specific hazards within a mill, the tendency after 1815 was for insurers to increase the range and complexity of these charges as industrial risk assessment became more detailed and precise. It is impossible to calculate the amount of additional premiums charged, but it would have certainly increased the above estimates of the total cost of insurance, based as these are on standard mill premium rates alone.

Turning from costs to benefits, Table 3 reveals the remarkable extent to which the textile industries during the post-war decade received back sums paid out for insurance, through claims payments. Stamp duty, of course, could not be recovered, but otherwise a very high proportion of premiums returned to the purses of policyholders. Given that insurers such as Phoenix measured profitability by the generous benchmark of a 25 per cent surplus of premium income over losses and management expenses, (the latter averaged 20 to 30 per cent for most offices), clearly few of the firms listed in Table 3 came near to achieving this on their underwriting of textile risks in this period.[28]

It is difficult to calculate the frequency of mill fires in this period. Few claims registers have survived, and newspaper reports recorded mainly the larger fires. It is likely they stood in some undefined relation to the business cycle, with moral hazard rising during recessions, and arson attacks increasing during periods of investment in new technology. During the 1790s, the mid-1820s and early 1830s, incendiarism, often related to labour discontent, was a considerable problem for insurers of mills and warehouses. Fire offices responded by offering rewards for convictions, hiring Bow Street officers, and contributing towards the expenses of arson investigations.[29]

Table 3 shows the worst losses were experienced on wool textile mills, where premiums appeared particularly inadequate to the risk during the later 1820s. Underwriting results were also very poor for cotton and silk mills, and calico print works, but better for flax mills during the post-war decade. The latter may reflect the high premiums for such mills, rather than any lesser propensity to burn down. Sun's surveyor, visiting Leeds flax mills in 1816, commented that the raw material was 'more hazardous than cotton', but that the increasing adoption of wet-spinning in the larger factories 'may counterbalance the additional risk'.[30] Although there are fewer figures for earlier periods, the cotton industry had long enjoyed a high proportion of premiums reimbursed as claims. Between 1789 and 1796 Sun, REA and Phoenix paid out an average of £16,875 each year on cotton mill losses, which amounted to over 150 per cent of premiums received from these risks.[31] By the mid-1790s the London offices were convinced that the 'new fangled manufactories' were unprofitable.[32]

Generally it seems that the premium costs of mill insurance were often more than covered by the amount paid out in claims to the textile industries.[33] Furthermore, with the adoption of with-profits policy schemes by many offices after the war, the net cash flow increasingly moved in favour of textiles before the 1830s. In its first division of profits in 1824, for instance, Norwich Union returned to policyholders 20 per cent of all premiums paid over the previous three years.[34] Textile policyholders did particularly well out of such bonuses. Millowners paid high premiums and were therefore entitled to a large share of divisions of profits based on premium payments. At the same time, high loss ratios on their insurances meant that millowners contributed little or nothing to profits. In 1831 Guardian calculated that all its special risks produced an underwriting surplus (premiums less claims and management expenses, expressed per £100 insured) of £4 10s. (£4.50) per cent, while cotton mill policies alone produced a net loss of £3 13s. (£3.65) per cent. One official suggested excluding cotton mill policyholders from participating in the company's septennial division of profits, and queried the prudence of continuing to accept cotton mill insurances at all.[35] Overall the evidence suggests that the financial cost of fire insurance to the British textile industries during the Industrial Revolution was slight, while the financial benefits to those who insured and then lost property by fire, an unknown but probably high proportion of all textile policyholders, were considerable.[36]

III

The most important influence which insurance exerted on the development of the textile industries related not to its financial costs and benefits, nor to the rates of participation of textile entrepreneurs in fire offices, but to the impact of underwriting on the physical construction of mills and warehouses, and on the organisation of production. The first general classification of mills was agreed by the three leading fire offices in 1790. This rated cotton mills according to the type and location of their stoves, the presence of stoves or hazardous processes in adjacent buildings, and the thickness of party walls.[37] Early mills were also inspected by surveyors, usually senior officials from London insurance firms. Few had direct experience of northern factories and relied greatly on the knowledge of local agents. On occasions their recommendations, even when well informed, were rejected by London boards, and the underwriting of textile risks remained inadequate in many areas, as continuing high losses showed. Sun, for instance, in the 1800s failed to respond to the design improvements pioneered for the cotton and flax industries by Strutt and Bage, and lost many of its better textile risks in the north-west as a consequence.[38]

After 1815, London insurers increasingly appreciated the need for 'meticulous, systematic and technical rating', with Phoenix undoubtedly proving the most adept at adjusting rates, ceilings and exclusion clauses to accommodate building alterations and safety improvements.[39] Nevertheless, even Phoenix could still surprise itself at the laxity of its risk assessment, for instance, of densely built calico printing plants at Manchester. Other London insurers such as Guardian were also slow to understand the benefits of fire proofing links between contiguous mill buildings, or the hazards of night-working in cotton mills.[40]

Undoubtedly the most rigorous and technically up to date assessment of textile risks was undertaken by the new northern specialists of the 1820s, who benefited from the industrial experience of their directors. All MFLAC's special risks were examined by two 'inspecting directors' who recommended proposals to the weekly board meeting and signed acceptances on its behalf. During the late 1820s and 1830s both the Leeds and Manchester offices had committees of directors which frequently convened to classify risks and to survey categories of special risk in particular localities. Although the largest London insurers established committees during this period to examine industrial losses, none repeatedly sent company managers and directors on personal inspections of industrial risks as these northern offices did from 1825.[41]

The primary concerns of the Manchester and Leeds underwriters were plurality of tenure, location of property and contiguity to hazards, and, particularly in Yorkshire, drying stoves. Although initially inclined to reject proposals on mills occupied by more than one tenant, or adjacent to others in multiple occupation, the ubiquity of multiple tenure and growing competition soon forced MFLAC to charge supplements – usually 1s. (£0.05) per cent per additional tenant in a warehouse, 2s.6d. (£0.12½) per cent in a woollen mill, and 4s. (£0.20) per cent in a cotton mill – on premises occupied by up to four tenants. Nevertheless multiple tenure and subletting continued to make the Manchester insurers nervous about unidentified hazards, and frequently led to the rejection of proposals. The Leeds office appeared marginally less nervous, accepting premises with up to five occupants, and charging less than MFLAC.[42] This reflected, perhaps, a greater extent of subletting in Lancashire cotton towns than in the Yorkshire woollen districts. MFLAC cotton mill policyholders in Ashton, Oldham and Stockport, for instance, typically shared their premises with machine making, silk spinning, metal turning and wool carding shops.[43]

As with multiple tenure, concern about the location of property increased the need for quality of information at the point of assessment. Leeds & Yorkshire charged extra for country mills outside the range of their fire engines.[44] MFLAC turned down proposals where the building to be insured stood near another already insured by MFLAC, and where both insurances together would exceed the company's standard £5,000 ceiling on single risks. Insurance was also refused where the amount proposed on a building by its owner, when added to the sum insured by a tenant on stock or machinery, would exceed MFLAC's ceiling. Where mills and warehouses were built close to other hazards, underwriters required to know the number of tenants and nature of trades in surrounding buildings, the precise distances involved, how buildings were joined and the materials used to construct such links. Buildings of different types and hazards were only rated separately if deemed far enough apart. Careful distinction was made between adjacent properties, and those linked by a door or staircase, with the most punitive extra charges for the latter.[45]

Accurate information about hazards within insured property was also required. The materials, thickness and quality of construction of floors, walls, partitions, ceilings, stairs, entrances, trap doors, gangways and chimneys were all considerations when setting rates.[46] The use of stoves for heating and drying materials usually resulted in an extra charge, with stove pipes measured to the nearest foot. Horizontal piping and pipes projecting through floors and roofs were regarded as particularly dangerous.[47] Where stoves were located near or used for a particularly dangerous process, including most textile preparatory processes, underwriters insisted stove and process be separated. The floors of rooms where timber, yarn, teazles, wool, cotton and flax were dried, and any tenter frames within these rooms, had to be well clear of brick flues enclosing stove pipes, and preferably made of iron.[48]

New technology such as mule spinning, or shoddy and combing machinery in wool textile mills, might raise rates or invalidate policies. Cotton spinning mills were classified by the number of yarn counts spun, and woollen mills by whether coarse or fine, white or mixed cloths were manufactured. Coarse coloured cloth mills were regarded as especially hazardous due to the quantities of fish oil mixed into the wool.[49] Cleanliness and the storage of waste were also concerns. The Leeds office insisted that waste wool known as 'fud' be specified in the stock of coloured cloth manufacturers, as it proved prone to self-ignition, and that waste in coarse woollen mills be removed 'thrice a week at least'.[50] A combination of dirt, grease and waste lying on floors, or around boiler flues and carding engines, or in candle-lit rooms was regarded as extraordinarily hazardous, and led, for instance, to MFLAC cancelling the policies of 17 Glossop cotton firms in 1828. Policies were also cancelled when mills began working 24 hours by candle-light during trade upswings, though the underwriters were not totally inflexible in this regard. Leeds & Yorkshire increased premiums for night-work, and MFLAC allowed night-shifts where mills were being altered or suffering summer droughts.[51]

This long list of areas in which the requirements of fire underwriters impinged upon the exterior and interior arrangements of textile mills, warehouses and workshops, suggests a considerable influence exerted by insurance on their physical development. To what extent mill and warehouse owners responded to the demands of increasingly refined and rigorous risk classification and inspection, is more difficult to judge, particularly from the insurance records forming the basis of this study. The adoption of iron framing, for instance, was not only a response to huge fire losses in timber frame mills, but also, according to one observer in 1802, a result of 'the enormous insurance that is demanded in consequence'.[52] The improvements of the 1800s and early 1810s were to some extent the result of manufacturers, especially the larger millowners, attempting to reduce the amount of insurance cover they needed and escape the very high wartime premium rates. Iron-framed mills, such as Lee & Philips' cotton mill at Salford, regarded as 'completely incombustible', were often under- or uninsured, particularly where London insurance offices were slow to reduce premiums in recognition of 'fireproofing'. While few firms could afford the high costs of full conversion to Strutt-Bage type brick floors and arches, and iron columns, beams and roof frames,[53] this did not mean there were not widespread safety improvements during this period, which were at least partly related to the high cost of insurance. Manufacturers were paying more attention to the structure and interior arrangements of their premises from the 1800s, and attempting partial fireproofing. Some of the larger Yorkshire woollen and flax mills during the 1800s and 1810s were reducing the amount of timber in their construction, while some worsted mills were replacing stoves and grates with warm air heating systems. Sun's inspector reported a 'spirit of improvement' among millowners, dyers and calico printers in Manchester in 1806, where 'several (mills) are heated by steam, several are preparing to be lighted by gas and several are covering their wooden floors with iron plates and changing their wooden machinery for cast iron'. Ten years later another Sun inspector at Manchester noted the extension of gas lighting, steam heating, stone staircasing, and iron machinery, with more millowners placing boilers outside buildings, and erecting gasometers at greater distances from their mills.[54]

A second wave of improvements occurred during the 1820s. Guardian's agent at Manchester in 1827 believed that the town's cotton warehouses had 'considerably improved' since 1821, 'in consequence of the use of stoves instead of fire grates, the introduction of gas lights and improvement in the construction of buildings'. Several large 'fireproof' woollen mills were built at Leeds, notably Gott's new mill at Bean Ing with iron pillars, beams and roof trusses. Water troughs used in wet spinning, introduced into Leeds flax mills in 1826, were being covered over. Shafts, wheels, gears, spiked drums and carding rollers were boxed in, ventilators introduced to remove dust, and cleanliness and waste disposal improved.[55] In a period of low and falling premiums, it can be argued that a substantial proportion of these improvements were the result of the greater stringency of risk assessment, especially by new provincial insurers, and the increasing subdivision of risk and implementation of supplementary charges on extra hazards. Certainly factory reform and factory inspection induced many of the later safety improvements which related specifically to mill accidents. However, structural alterations and changes in internal organisation, including areas such as lighting, heating, ventilation, waste removal and the location of production processes within buildings, may have been, to a significant degree, the result of the pressure exerted by underwriting requirements as millowners searched for reliable insurance cover. In the cotton industry, particularly, the underinsurance of capital in the 1820s, indicated by the estimates in part II above, would have enhanced rather than diluted this underwriting pressure for improvements. In this respect it is interesting that the textile industry most fully insured before the late 1820s – wool textiles – suffered the worst losses by fire.

Finally one might also suggest that this pressure had some marginal productivity costs and benefits, although these are beyond measurement. On the one hand, more rigorous underwriting may have led to greater expenditure on materials and the rearrangement of plant and machinery without any accompanying increase in output, thus having a short-term negative impact on the productivity of capital. On the other hand, cleaner, safer, better laid-out mills may have contributed to both short- and long-run improvements in labour productivity.[56]

IV

At the end of the eighteenth century as much as 70 per cent of fixed capital in textile mills was insured, although the proportion varied considerably by region. By the third decade of the next century only about half the capital in the British cotton industry was insured, but wool textile capital remained largely insured until at least the late 1820s. The total cost of this insurance to the cotton industry fell relative to the value of output, during the war primarily because of the decline in premium rates, and after 1815 mainly due to a fall in the proportion of total capital insured. By contrast, wool premium rates rose in the 1820s relative to other costs such as raw materials, and insurance cover became more expensive and difficult to find. Throughout the period the cost of insurance amounted to only a fraction of the value added in both industries, and was often more than compensated for by payments returned via insurance claims. The burden on individual policyholders, however, especially those facing rising supplementary charges for additional hazards within their premises, could be fairly high. At least one Leeds millowner in 1833 cited insurance along with taxes, rent, 'wear and tear on gear', and overlookers' salaries, as a 'fixed cost', a necessary and normal charge.[57]

The above analysis, however, suggests that the impact of insurance was greatest in the area of the material construction of textile premises and their internal arrangement. Provincial fire offices offered textile entrepreneurs opportunities to diversify their business interests as well as their assets, and take an active role, either as managers, or as members of local shareholders' committees. The introduction of their expertise into insurance boardrooms helped refine the underwriting of textile risks, which in turn had important consequences for millowners and merchants seeking insurance cover. The scope and detail of risk assessment and classification increased substantially in this period. The underwriting of textile and other industrial property became more precise, and was backed up with a growing range of extra premium charges on hazards identified as additional to the basic risk. The principle impact of fire insurance on the British textile industries lay not in the financial costs, but in the rigorous conditions attached by underwriters to its supply. This paper has suggested that these conditions represented significant forces for change in the physical organisation of textile production during the Industrial Revolution.

NOTES

I wish to thank David Richardson and two anonymous referees for their helpful comments on earlier drafts of this paper. The usual disclaimer applies I am also grateful to Sun Alliance plc for permission to consult the Phoenix Assurance Archive, and to Phil Turner of Royal Insurance, Leeds, for his assistance with the records of Leeds & Yorkshire.

1 P G M Dickson, *The Sun Insurance Office, 1710–1960* (1960), Chs.5 and 8; B Supple,

The Royal Exchange Assurance A History of British Insurance, 1720–1970 (Cambridge, 1970), Ch.4; C. Trebilcock, *Phoenix Assurance and the Development of British Insurance: Volume I, 1782–1870* (Cambridge, 1985), Ch.7.

2. J.R. Ward, *The Finance of Canal Building in Eighteenth Century England* (Oxford, 1974); L.S. Pressnell, *Country Banking in the Industrial Revolution* (Oxford, 1956).
3. Manchester Fire 1771–88, Liverpool Fire 1777–95. Very little is known about these offices. See Trebilcock, *Phoenix Assurance*, pp.102, 361–2.
4. R.J Ryan, 'A History of the Norwich Union Fire and Life Insurance Societies from 1797 to 1914' (unpublished Ph.D. thesis, University of East Anglia, 1983), pp.120–1, table 13, p.968.
5. See R. Pearson, 'Collective Diversification: Manchester Merchants and the Business of Fire Insurance in the Early Nineteenth century', *Business History Review*, Vol. 65 (1991), pp.379–414.
6. Calculated from R. Lloyd-Jones and M.J. Lewis, *Manchester and the Age of the Factory* (1988), tables 7.4, 7.5
7. The phrase is from V.A.C. Gatrell, 'Incorporation and the Pursuit of Liberal Hegemony in Manchester, 1790–1839', in D Fraser (ed.), *Municipal Reform and the Industrial City* (Leicester, 1982), pp.16–60.
8. Calculated from Leeds City Archives, acc. 3393, box 41, Leeds & Yorkshire, Secretary's Letter Book, 1824–29.
9. See footnote five above.
10. Guildhall Library, London (hereafter GL), MS 16223/1 MFLAC, General Court Minutes, 4 May 1825.
11. MFLAC insured about £1m per annum on cotton mills during the late 1820s, compared to Phoenix's £1.3m. Calculated from GL MS 16222/2–8, MFLAC, Directors' Minutes (hereafter DM), 29 Feb.1832; Cambridge University Library, Phoenix Assurance Archive (hereafter PAA), MS PX508, Phoenix Annual Analysis of Business.
12. Calculated from an average of £225.4m insured in 1801/2, and Eden's estimate of £613m insurable property. *Report of the Commissioners of the Inland Revenue*, (P.P. 1870, XX), p.193. Eden's estimate given in C. Walford, 'Fires and Fire Insurance', *Journal of the Royal Statistical Society* (Sept. 1877), pp.403–4. I am grateful to David Jenkins for the latter reference.
13. PRO, Chatham Papers, 30/8/187, pp.234–8, Watts to Pitt, 22 June 1797; S.D. Chapman and J. Butt, 'The Cotton Industry', in C.H. Feinstein and S. Pollard (eds.), *Studies in Capital Formation during the Industrial Revolution* (Oxford, 1988), pp.105–25.
14. Calculated from S.D. Chapman, 'Fixed Capital Formation in the British Cotton Manufacturing Industry', in J.P.P. Higgins and S. Pollard (eds.), *Aspects of Capital Investment in Great Britain, 1750–1850* (1971), pp 68–70; J. Butt, 'The Scottish Cotton Industry during the Industrial Revolution, 1780–1840', in L.M. Cullen and T.C. Smout (eds.), *Comparative Aspects of Scottish and Irish Economic and Social History, 1600–1900* (Edinburgh, 1975), pp.116–28.
15. Calculated from Chapman, 'Fixed Capital Formation', Appendix 6.
16. Calculated from duty collection allowances, 1831/2, given in *Stamp Duty Returns* (P.P. 1831–32, XXXIV), p.377; (P.P. 1833, XXXIII), p.423.
17. The Leeds figure derives from the total annual average sum insured by Leeds & Yorkshire, 1824–29, of £3,456,667, with an estimated 30 per cent of this covering wool textile insurances. The latter figure is based on the known proportion of MFLAC's insurances – 34 per cent, 1824–32 – which covered cotton mills. The assumption is that the Leeds insurers specialised in wool textiles, roughly to the same extent as MFLAC, a similar sized firm, specialised in cotton. A close reading of the firm's correspondence supports this assumption of considerable specialisation. Leeds & Yorkshire, Secretary's Letter Book, 1824–29.
18. 38 per cent is the average of the proportions of non-spinning capital in two of Chapman and Butt's estimates: 38.9 per cent in 1811–12, and 36.1 per cent in 1833–35. Annual average total fixed capital formation in the 1820s was £13.36m. Chapman and Butt, 'The Cotton Industry', pp.124–5.

19. D.T. Jenkins, 'The Wool Textile Industry, 1780–1850', in Feinstein and Pollard (eds.), *Studies in Capital Formation*, pp.126–40. 20 per cent is a random increment. Stock typically amounted to 75 per cent of a woollen manufacturer's capital in this period, though less for worsted firms. However, only a small proportion of this, say 10 per cent, would be captured by a mill insurance policy. (Most would be insured separately in a warehouse) To this might be added another 10 per cent to account for capital tied up in finishing workshops excluded by Jenkins. For the inclusion of 'insured stock' in the cotton estimates, see Chapman, 'Fixed Capital Formation', p.91.
20. There are at present no insurance estimates for the 1830s to support this supposition, nor yet do we know anything about the proportion of capital insured in the domestic branches of both industries.
21. £2.95m at 31/6d per cent premium + 1/6d per cent duty. 31/6d per cent was charged by Phoenix and Sun on the second of three classes of cotton mills in 1797. PAA, Phoenix Directors' Minutes, 13 April 1797; Dickson, *Sun Insurance*, p.92. Value added calculated from P. Deane and W.A. Cole, *British Economic Growth, 1688–1959* (2nd edn., 1969), table 42, p.185.
22. £4 35m at the standard cotton mill premium of 14/- per cent + 3/- per cent duty. Value added for 1824–26 from Deane and Cole, *British Economic Growth*, table 43, p.187.
23. £0.911m at 15/- per cent premium + 2/6d per cent duty. Value added from Deane and Cole, *British Economic Growth*, table 47, p.196.
24 £2.95m at 10/6d per cent premium + 3/- per cent duty. Value added for 1825–29 from Deane and Cole, *British Economic Growth*, table 47, p.196.
25. Calculated from GL MS 11937, Sun Fire Office, Policy Registers – Country Series, 155/1042149; D.T. Jenkins, *The West Riding Wool Textile Industry, 1770–1835* (Edington, 1975), p.290; Brotherton Library, University of Leeds, Gott Papers, MS 193/211; H. Heaton, 'Benjamin Gott and the Industrial Revolution in Yorkshire', *Economic History Review*, 1st series, Vol.III (1931/32), pp.45–66. Bean Ing employed about 1,100 workers during the 1820s.
26 For instance, the Keighley rag manufacturer who paid nearly £5 in 1826 to insure his mill and some cottages for £1,500. Leeds & Yorkshire, Secretary's Letter Book, f.317.
27. A Thornthwaite woman, for instance, faced a premium increase of over 16 per cent, from £8 10s. to £10, on a £1,000 policy, depending on the distance between her adjacent corn and flax mills. Leeds & Yorkshire, Secretary's Letter Book, f.281, 20 Oct. 1825.
28 Trebilcock, *Phoenix Assurance*, p.711
29 PAA, Phoenix Directors' Minutes, 23 Feb. 1796; MFLAC, DM, 22 Dec. 1825, 3 May 1826, 18 Dec. 1830, 5 Jan. 1832; GL MS 16170/4, Atlas Assurance, Directors' Minutes, 10 Jan. 1832
30 GL MS 11935A/1, Sun Fire Office, Green's Report, 10 May 1816. Phoenix charged an average of 17/10d per cent between 1810 and 1824, compared to 15/- per cent on cotton mills, GL, MS 14116, Sun Fire Office, Simplified Profit and Loss Accounts.
31. Our estimate of £40,000 cotton mill premiums (+ £2,000 duty) for 1797 was based on a standard premium of 31/6d per cent for a second class mill. Rates for cotton mills were barely a quarter of this in 1784 (4/- per cent to 7/6d per cent). Even ignoring any increment in the number of mills insured between 1789 and 1796, average annual premiums would have amounted to just £10,000 over the period at the lower premium rate. Trebilcock, *Phoenix Assurance*, p.353; Supple, *Royal Exchange*, p.91; Dickson, *Sun Insurance*, p.92.
32 Cited in Trebilcock, *Phoenix Assurance*, p.355
33 As explained elsewhere, many fire offices remained in the market for mill insurances, partly because they formed a small proportion of total business, but mainly because of the important 'tied business' – safer domestic property of friends and relatives of manufacturers – that mill policies brought. See R. Pearson, 'Taking Risks and Containing Competition: Diversification and Oligopoly in Early Nineteenth Century Fire Insurance', *Economic History Review*, forthcoming.
34 Ryan, 'A History of the Norwich Union', p.490.
35. GL MS 14281/4, Guardian Assurance, Court Minutes, 1 Oct. 1830, 4 Mar. 1831.

36. It is not known what proportion of claims payments to millowners were ploughed back into their businesses.

37. GL MS 11931/7, Sun Fire Office, General Committee Minutes, 8 June 1790

38. Sun also ignored a recommendation to issue a comprehensive questionnaire to all millowners intending to insure. The same office in 1803 adopted a tariff for cotton mills based on height and size, which was rejected by other insurers, and which contributed to the decline of Sun's mill business in Manchester. GL MS. 11935A/1, Sun Fire Office, Report Books, Green's Report, 10 May 1816; Dickson, *Sun Insurance*, p.93. On the work of Bage and Strutt, see J. Tann, *The Development of the Factory* (1970), Ch. 9.

39. Supple, *Royal Exchange*, p.91; Trebilcock, *Phoenix Assurance*, p.368. Cf. GL MS 11935A/1, Sun Fire Office, Report Book, Committee on Steam Boilers, 30 June 1823.

40. PAA MS PX1010, Phoenix Agents' Extra Letter Book A, 12 March 1821; GL MS 14281/2–3, Guardian Assurance, Court Minutes, 27 April 1827, 28 Nov. 1828.

41. MFLAC, DM, 31 Jan., 30 May, 1 Sept. 1825, 3 April 1828; Leeds & Yorkshire, Secretary's Letter Book, f. 173, 28 April 1825; f. 271, 11 Oct. 1825.

42. MFLAC, DM, 31 Jan., 21 Feb., 13 June 1825, 7 Dec. 1826, 27 Aug. 1829, 13 May, 30 Dec. 1830, 28 Feb. 1833; Leeds & Yorkshire, Secretary's Letter Book, f. 130, 9 March 1825; f. 311–12, 29 Aug. 1828, f. 315–16, 23 April 1829; f. 333, 6 June 1829.

43. For examples, MFLAC, DM, 28 March 1825, 18 July 1825, 22 Aug. 1825, 7 Dec. 1826.

44. Leeds & Yorkshire, Secretary's Letter Book, f. 334, 10 June 1829; f. 353, 27 Aug. 1829.

45. MFLAC, DM, 24 Nov. 1825, 26 July, 1 Nov. 1827, 23 Oct. 1828, 4 June, 1 Oct. 1829, 29 Sept. 1831.; Leeds & Yorkshire, Secretary's Letter Book, f. 44, 15 Dec. 1824; f. 91, 24 Jan. 1825; f. 114, 12 Feb. 1825.

46. For examples, MFLAC, DM, 12 Dec. 1825, 30 Oct. 1828, 13 Aug., 1 Oct., 15 Oct. 1829, 12 July 1832; Leeds & Yorkshire, Secretary's Letter Book, fs. 204–6, 17 June, 18 June 1825.

47. Leeds & Yorkshire, Secretary's Letter Book, f. 280–1, 19 Oct. 1825; f. 300–1, 19 Oct. 1826; MFLAC, DM, 22 Aug. 1825, 14 Feb. 1828.

48. MFLAC, DM, 28 Feb. 1825; Leeds & Yorkshire, Secretary's Letter Book, f. 293, 11 Oct. 1826; ff. 128, 130, 9 March 1825; ff. 36–7, 6 Dec. 1824.

49. Ibid., ff. 36–7, 6 Dec. 1824; f. 87, 21 Jan. 1825; ff. 105–6, 2 Feb. 1825; ff. 280–1, 19 Oct. 1825; f. 297, 17 Oct. 1826; MFLAC, DM, 28 Feb. 1825, 12 Jan. 1826, 14 Feb. 1828, 4 Oct. 1843.

50. Leeds & Yorkshire, Secretary's Letter Book, f. 46, 17 Dec. 1824; f. 154, 31 March 1825, ff. 156–7, 6 April 1825.

51. Leeds & Yorkshire, Secretary's Letter Book, f. 233, 4 Aug. 1825; f. 262, 26 Sept. 1825; MFLAC, DM, 15 Feb., 1 March 1827, 3 Jan., 24 Jan., 14 Feb., 24 Dec. 1828, 24 Sept. 1829, 1 April 1830, 12 Jan. 1832, 21 Feb., 26 Sept. 1833, 29 March 1836

52. J. Britton and E.W. Bayley, *The Beauties of England and Wales* (1802), vol.3, cited in H.R. Johnson and A.W. Skempton, 'William Strutt's Cotton Mills. 1793–1812', *Transactions of the Newcomen Society*, Vol. XXX (1955–57), pp.179–205. I am grateful to an anonymous referee for this reference.

53. The additional cost of totally fireproofing a mill has been estimated at 25 per cent in the 1790s, and much more by the 1830s. Tann, *Development of the Factory*, p.147.

54. Jenkins, *The West Riding Wool Textile Industry*, pp.59–60; GL MS 11935A/1, Sun Fire Office, Report Books, Bewicke's Report, Oct. 1806; Green's Report, 10 May 1816.

55. GL MS 14281/3, Guardian Assurance, Court Minutes, 11 Jan. 1828; Jenkins, *The West Riding Wool Textile Industry*, pp.60–1; *R.C. on Employment of Children in Factories*, (P.P. 1833, XX), C1, Drinkwater's report, Leeds, evidence of Mark Best, p.74, John Hannam, p.89, John Sunderland, p.45, various children, p.97; ibid., C2, Power's Report, Leeds, evidence of Benjamin Bradshaw, p.35, John Dawson, p.44; *Factory Inspector's Reports*, (P.P. 1839, XIX), Report of R.J. Saunders, p.442; *Special Reports of the Inspectors of Factories*, (P.P. 1841, X), pp.240–66. For examples of Yorkshire firms employing ventilators by 1833, see *R.C. on Employment of Children in Factories*, Supplementary Report, Pt. II, (P.P. 1834, XX), C1, pp.44, 51, 52, 57, 61, 75.

56. Feinstein notes production organisation as one of the unmeasurable factors in estimat-

ing productivity. C.H. Feinstein, 'Capital Accumulation and the Industrial Revolution', in R. Floud and D. McCloskey (eds.), *The Economic History of Britain since 1700: Vol. 1, 1700–1860* (Cambridge, 1981), pp.128–42.

57. *R.C. on Employment of Children in Factories*, Supplementary Report, Pt. II (P.P. 1834, XX), C1, p.42.

TABLE 1

TEXTILE MILL INSURANCES: SEVEN FIRE OFFICES

	Cotton Mills £ insured (annual averages)		Wool Textile Mills £ insured (annual averages)
Phoenix (1821–30)	1,308,660	(1815–30)	90,573
MFLAC (1824–32)	995,286		144,563
Guardian (1823–28)	540,850		?
REA (1822–28)	407,314	(1815–30)	100,100
Sun (1819–28)	300,000	(1815–30)	247,953
Protector (1825–28)	75,650		?
Norwich Union	?	(1823)	1,080,000*
	3,627,760		1,663,189

Note: £780,000 on 193 mills in the West Country, £300,000 on Yorkshire mills. This marked the zenith of Norwich Union's woollen mill business. Premiums from Leeds fell by more than half, 1821–30, and the firm ceased insuring woollen mills at Christmas 1827. Norwich also lost woollen mill business in the West Country to Salamander, West of England and Gloucester offices, after attempting to raise rates in 1823. See R.J Ryan, 'A History of the Norwich Union Fire and Life Insurance Societies from 1797 to 1914' (unpublished Ph.D. thesis, University of East Anglia, 1983), pp.486–7, 518n.

Sources: PAA MS PX508, Phoenix Annual Analysis of Business; MS PX509, Phoenix Statistical Analysis of Business; MFLAC, DM, 29 Feb. 1832. Cotton mill insurances calculated, where necessary, from premiums at the average rate of 14/- per cent, wool textile mill insurances at 10/8d per cent.

TABLE 2

RAW MATERIAL PRICES AND MILL PREMIUM RATES, 1797–1829

	1797	1803	1815/16	1829
Raw Wool				
(Southdown, d/lb)	15¼		23½	6
(new pence/lb)	(6.4)		(9.8)	(2.5)
% increase			54.1	−74.5
Woollen Mill Premium Rate				
(First Class, s.d.%)	15/–		7/6	10/6
(new pence %)	(75.0)		(37.5)	(52.5)
% increase			−50.0	40.0
Raw Cotton				
(Average Upland, d/lb)		12½	18¼	5¾
(new pence/lb)		(5.2)	(7.6)	(2.4)
% increase			46.0	−68.5
Cotton Mill Premium Rate				
(First class, s.d.%)		21/–	12/6	7/6
(new pence %)		(105.0)	(62.5)	(37.5)
% increase			−40.5	−40.0

Sources: B.R. Mitchell and P. Deane, *Abstract of British Historical Statistics* (Cambridge, 1962), pp.490, 493; Mill premiums at lowest rate on buildings offered by principal offices for first class mills, from PAA, MS PX1010, Phoenix Agents' Extra Letter Book A, 13 April 1797; Ryan, 'A History of the Norwich Union', p.187; MFLAC, DM, 19 Feb., 27 Aug. 1829; Dickson, *Sun Insurance*, p.93.

TABLE 3
PREMIUMS, LOSSES AND LOSS RATIOS ON TEXTILE INSURANCES (ANNUAL AVERAGES)

	£ Losses	£ Premiums	Loss Ratios (%)
Cotton Mills			
Sun (1819–28)	1,814	1,878[a]	96.6
REA (1818–28)	3,476	3,733	93.1
Phoenix (1821–30)	4,872	9,672	50.4
Guardian (1821–30)	2,804	4,106	68.3
MFLAC (1824–32)	5,955	7,838	76.0
Protector (1825–28)	1,000	530	53.0
	19,921	27,757	71.8
Wool Textile Mills			
Sun (1815–30)	1,373	768[b]	178.8
REA (1815–30)	625	679[c]	92.0
Phoenix (1815–30)	671	474[d]	141.6
MFLAC (1824–32)	495	655	75.6
	3,164	2,576	122.8
Flax Mills			
Sun (1812–16)	93	562	16.5
(1818–24)	152	313	48.7
Phoenix (1810–24)	293	661	44.3
Silk Mills			
Sun (1818–24)	204	79	256.3
Phoenix (1812–24)	57	85	67.4
Calico Print Mills			
Phoenix (1795–1824)	1,141	1,000–1,200	95–114
MFLAC (1824–32)	1,425	990	144.0

Note: Premiums and Losses are annual averages. Loss ratios are *Total* losses over given period as percentage of *Total* premiums.

a. 1814–29.
b. 1818–24.
c. 1815–24
d. 1816–30.

Sources: Calculated from GL MS 11932/15, Sun Fire Office, Committee of Management Minutes: GL MS 11935A/1, Sun Fire Office, Report Books, Green's Report, 10 May 1816; GL MS 14116, Sun Fire Office, Simplified Profit and Loss Accounts; PAA MS PX508, Phoenix Annual Analysis of Business, MS PX509, Phoenix Satistical Analysis of Business; GL MS 14281/4, Guardian Assurance, Court Minutes, 1 Oct. 1830; MFLAC, DM, 29 Feb. 1832.

British Business and the African Trade: Richard & William King Ltd. of Bristol and West Africa, 1833–1918

MARTIN LYNN

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Few studies exist of British firms involved in the African trade in the 19th century. Richard & William King of Bristol was one of the largest such firms and study of its growth during the nineteenth century throws new light on the development of Britain's African trade and on the business structures that evolved within it. In particular, it shows how firms coped with the depression that hit the African trade so severely in the 1880s. Kings – despite not being based in Liverpool, the heart of the British side of the trade – was one of the few of the long-established firms to survive the 1880s depression. This paper shows why this was the case and why, having survived the depression, it was taken over by William Lever in 1918.

Much work has been done on Liverpool's nineteenth-century African traders. The importance of Liverpool as the major British port in the nineteenth-century African trade has been long established and thanks to the work of Peter Davies, John Latham and others, the role of Liverpool traders and shippers in this trade has been well laid out.[1] Yet it is not often realised that Bristol played a major role in the nineteenth-century African trade and that a Bristol firm, Richard & William King, was one of the biggest British businesses to operate in West Africa in this period.[2] Indeed Kings were at the centre of trading relations between Britain and West Africa for a century and study of the firm's activities throws important light on the history and structure of the West African trade as well as on the way Bristol traders adapted to the dominance of Liverpool as a port in Britain's overseas commerce.

Study of the Kings' business is important in its own right: we have no detailed study of a firm in the early nineteenth-century African trade, nor of the way business structure evolved within it. Moreover, as one of the firms at the heart of the trade in the 1880s, the history of Kings illustrates the way individual firms responded to the problems of the 1880s depression and the subsequent political partition of the continent.[3] Not least, the

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eventual fate of Kings illuminates the origins of Unilever Ltd., the firm that eventually absorbed Kings in the twentieth century.

The firm of Richard & William King had its origins in the career of Thomas King (1759–1841), a sailing master operating at the time of the French wars. Thomas King came from a merchant family of Bristol: his grandfather had been mayor of the City. The family traded with the West Indies, but it was Thomas King who began the trading connection with West Africa.[4] By the early 1790s he was trading in his own name to West Africa, to the Americas and to Ireland, and had become an important trader in Bristol. The 1790s was the decade in which his business significantly grew. Important in this was King's marriage, in 1796, to Sarah Poole (1765–1837), who may have brought money with her; the name of King and Poole appears in Bristol shipping records of this time.[5] West Africa however remained a minor part of King's activities in this period – just one voyage in 1799 out of the 37 he had interests in. With the ending of the French wars, however, Thomas King began to concentrate increasingly on the African trade and during the mid-1810s his ships began to open up new areas of the coast, like Gabon and the Ivory Coast, to trade with Britain.[6] By this time the firm was operating from 2 Redcliffe Parade; Thomas King owned King Wharf in the floating harbour below the house and stored his African produce in the adjoining caves.[7] It was this business that his two sons, Richard Jenkins Poole King (1799–1874) and William Thomas Poole King (1806–87), were to inherit when in 1833, at the age of 75, he handed over control of the firm and its name was changed to Richard & William King.[8]

It was Richard and William King who decided to concentrate the firm's energies exclusively on the African trade. They picked the right moment. The years following the abolition of the British slave trade in 1807 had been years of difficulty for the African trade as traders searched for 'legitimate' commodities to replace the trade in humans. Initially this proved a difficult task, with the several invasions of the Gold Coast by the Asante in this period further complicating matters. The period of transition between the slave trade and 'legitimate' trade proved difficult for many, and numerous British traders on the coast went bankrupt.[9] By 1830 however, a new trade had emerged to replace the trade in slaves. This was the trade in palm oil, and by 1830 it was established as the central commodity in commerce between West Africa and Britain.

The 1830s were to see a major boom in the African trade. Many commodities were to be traded from West Africa in this period: timber for the Navy, ivory, dyewoods, gum and beeswax, but it was the trade in palm oil that was at the centre of commercial relations between West Africa and Britain.[10] Palm oil – the oil extracted from the fruits of the palm tree, *elaeis guineensis* – was primarily used in soap and candle manufacture in Britain in this period. It was also used as a lubricant for machinery, especially railway stock, and had uses in treating wool and in tin plate manufacture.[11] Although palm oil had been exported from West Africa from the sixteenth century, it was in the years after 1807, as Britain's Industrial Revolution proceeded apace, that the quantities arriving in Britain increased dramatically. In 1807 2,233 cwt. were imported into Britain; by 1830 this had reached 213,467 cwt., and the growth was to continue thereafter.[12] The trade was to reach a peak in the late 1850s and early 1860s. In 1862 865,890 cwt. were imported and the price of palm oil in Britain stood at around £45 a ton, with West Africa providing virtually the entire supply of palm oil for British industry in this period. Prices were high and profits appeared to be dramatic: while the Liverpool price stood at £45 a ton, oil could be bought at around half that price in Africa. This was the heroic era of the trade. After the early 1860s however, while the quantities of oil imported into Britain continued to rise to stabilise at around 1 million cwt. *per annum* from the early 1870s, the value of the trade began to decline steeply as the price of oil fell dramatically to the late 1880s.[13]

Liverpool had been the port at the heart of the African slave trade before 1807 and it was to be the port at the heart of this 'legitimate' trade. Its hinterland provided the major market for palm oil, as well as other African commodities. A number of far-sighted Liverpool firms, many of them ex-slavers, were to pioneer this 'legitimate' African trade and the ones who moved into it at this time were to dominate it for several decades. The Tobin brothers, John and Thomas, were perhaps the major figures behind the early growth in the oil trade, with the former being the figure responsible for developing the trade from Old Calabar, the initial major source of palm oil in these early years.[14] They, as well as Charles Horsfall of Liverpool, were to be the major oil traders for the first half of the nineteenth century.

It was this burgeoning African trade on which Richard and William King decided to concentrate in the early 1830s. Although this was a rapidly growing trade, success was by no means assured for a firm operating out of Bristol. The dozen or so major Liverpool traders, many with experience that went back to the slave trade, were well established in the trade. They had the contacts in West Africa and their Lancashire industrial hinterland provided a ready market. As the African trade operated on credit – with large quantities of capital, or 'trust' as it was called, being given out to the coastal middle-men who purchased the oil in the inland markets – contacts and experience were of the essence in choosing where and with whom to do trade.[15] The Liverpool traders' long experience thus gave them a major advantage; and the heart of the trade, the Niger Delta area where the vast bulk of West Africa's oil was produced (particularly the high quality, high priced oil), lay almost exclusively in Liverpool traders' hands.

Yet the decision of Richard and William King to concentrate on Africa was a far-sighted one, for by the 1850s their firm had established itself as one of the largest in the African trade. This success was largely based on Kings' opening up of new areas of the West African coast to British trade. Thomas King had begun operating on the Ivory Coast and Gabon in the mid-1810s, well away from the Liverpool preserve of the Niger Delta, and Richard and William King continued this practice.[16] Indeed the Ivory Coast came to be called the 'Bristol Coast' in this period. Kings' ships could also be found during the first half of the century on the Slave Coast and Gold Coast – long established in British trade – as well as in the Cameroons estuary, a major source of ivory in this period and soon to be also of palm oil.[17]

These areas suited Kings well, not least because they were largely ignored by the major Liverpool traders. These were areas of low quality, low priced oil. This had its advantages. It seems that low quality oil particularly suited the Bristol market: as other Bristol traders entered the trade it was to these same areas they turned.[18] Equally, unlike the Niger Delta, these areas produced other commodities as well as palm oil and this was another reason behind Kings' success in this period. Kings never traded exclusively in oil. Trading in a variety of products allowed them to spread their risk and avoid the dangers of sudden falls in the price of a particular commodity. It was extremely rare for a Kings ship to return to Britain in this period with only one commodity in its cargo, at a time Liverpool African traders were beginning to specialise almost exclusively in palm oil in their cargoes.[19]

Kings utilised a trading technique that precisely suited trading conditions in West Africa. As has been shown elsewhere, Bristol traders like Kings developed a 'coasting' system for trade in West Africa.[20] The problem for trade on much of the West African coast was the lack of natural harbours. In the Niger Delta, where the rivers of the area provided safe anchorages, Liverpool ships could remain moored for several months as their 'trust' was distributed and they waited for the oil to arrive. In some areas where they operated like the Cameroons, which had a river estuary, this was the technique Kings used. But they could not do this along most of the African coast. Instead, therefore, they utilised a different system, known as 'coasting'. This involved their ships sailing down the West African coast, distributing small quantities of 'trust' at a number of ports and then sailing back after a period, collecting the commodities before returning to Bristol.[21] This was an intensely time-consuming process as it required a ship to beat against the wind on the return voyage, but it had its advantages for it enabled Kings to spread their risks.[22] The problem with 'trust' was that a middle-man might fail, or that difficulties in the interior markets might lead to a port's inability to supply oil. In the Niger Delta, where large sums of 'trust' were given out, such a failure to produce oil could have severe consequences for a British trader. At best this could involve severe delays as a ship had to wait to the next season for its oil; at worst the 'trust' could be lost for ever. It was also an expensive system for, by the middle of the century, the Delta traders began to need resident agents and other staff based in the Delta rivers on a more or less permanent basis. Compared to this, 'coasting' was a safer, simpler and cheaper method and it continued to be the technique used by Kings right through to the later decades of the century.[23]

There were dangers in this coasting technique however. While the Niger Delta came to be regarded by other European traders almost as a British preserve, the rest of the African coast was not. Indeed during the early 1840s the French government began a policy of intervention along the West African coast. This was primarily designed to influence the British government for European political ends, but it was Kings who suffered. The areas the French chose for this activity – the Ivory Coast and Gabon – were both areas that Kings were long established in. The arrival of a French expedition in both these areas and the creation of a French post, accompanied by Customs collectors, at Assinie on the Ivory Coast in 1843 posed a major threat to Kings' trade. Kings immediately despatched letters to the Foreign Office protesting at the French activity and demanding government action to defend their business.[24] In the end little came of this episode, but it was a forerunner of problems Kings were to face later in the century.

Although Kings traded in a variety of African products in this period, it was palm oil that was to make the firm. Richard King, indeed, acknowledged his debt to the commodity, describing it as 'one of the most valuable articles of the present age'.[25] During the 1830s as Kings began to specialise exclusively in the African trade, palm oil became the central item in that trade. It was an expanding market. Prices in Britain continued to rise to their peak in the 1850s and the continued expansion in trade volumes to this period reflected a continuing shift in the terms of trade in favour of African producers. Kings indeed became major oil importers. A very rough idea of the success of the firm can be seen in the Customs Bills of Entry. There are many difficulties in using these statistics but, by 1845, Kings were the second largest importers of palm oil in Britain, a position they also held in 1850 and 1855. According to the

Bills of Entry figures, Kings were responsible for some 12 per cent of British imports of palm oil in 1850.[26] Even if these statistics are used only to give a general picture of Kings' activities, it is clear that by the 1850s the firm was established as a major oil importer, and Richard and William King's decision to concentrate on the African trade had been vindicated.

Yet despite their success, Kings remained an unsophisticated business in the 1850s – simply a partnership between two brothers. This was typical of the organisation of the African trade in this period. The African trade relied heavily on personal experience and knowledge of the African market. Most firms in the trade were small-scale operations that grew out of the experience of one person who had visited the area, often for another firm, usually as a sailing master (as in the case of Thomas King or the two Tobins), supercargo or surgeon.[27] It was an unspecialised trade. Perhaps because of the risks involved, shipping and trading were not separate functions in this period; traders owned their own fleets of ships to use in the trade. Kings were no different. In 1850 they had 10 ships involved in trading to Africa. These were in fact small for the African trade. In 1850 the average tonnage of ship used by Kings was a little over 216 tons, at a time when Liverpool ships were on average twice the size.[28]

The key to Kings' success was Bristol and its regional market. It has been shown elsewhere how Bristol could supply the various commodities like cloth, hardware and gunpowder that traders needed to sell in Africa in order to buy African produce.[29] Equally important was the market the region offered to Kings. Possibly their biggest market lay in South Wales where Britain's tin plate industry relied on palm oil as a flux in tin plate manufacture. Palm oil's use as a railway lubricant was significant given the engineering workshops of the Great Western Railway at Swindon; William King was also a director of the Bristol & Exeter Railway.[30] Also important were Bristol's long established links with Birmingham and the Midlands where palm oil could be used as an industrial lubricant. Palm oil's major use, however, was in soap making and Bristol had been for many centuries a major centre of soap manufacture in Britain. It still remained so in this period and its largest soap making firm, Christopher Thomas & Brothers, was a major force in the industry.[31]

By the 1850s the two King brothers were important figures in the commercial life of Bristol. Richard King, in his early thirties when his father retired, appears to have been the driving force behind the firm.[32] His commercial career was matched by one in public life, initially in opposition to Bristol's establishment. He was one of the earliest members of the Bristol Chamber of Commerce, set up in 1823 by local merchants protesting against the high dock dues charged by the Dock Company run by the Merchant Venturers and the City Corporation. He became a

Director of the Chamber in 1825 and was its President between 1839 and 1842.[33] In 1835 he was elected a City Councillor for Redcliffe, the ward where the business was located; in 1844–45 he was Mayor. As a trader paying harbour dues, the docks were his major concern and he was to establish himself as a major figure on the Council and its Docks Committee. He campaigned successfully to have the new City Council take over Bristol harbour in 1848 and became the first chairman of the Docks Committee established by the Council that year.[34] Thereafter his aim was to ensure that the Council did not increase dues in response to the growing campaign to improve the docks or build new ones at the mouth of the Avon.[35] William King also had an active career in public life.[36] He became a City Councillor in 1841, remained so for 39 years, and replaced his brother on the Docks Committee 1860–80.[37] But it was Richard King who was clearly the major figure in public life. He was regarded 'as, in effect, the head of the Council' and his acceptance into the city establishment came with his election, in 1851, as Master of the Society of Merchant Venturers. He served on its council for 23 years, while also remaining on the City Council until his death in 1874.[38]

The story of the King brothers is of two outsiders pushing into the centre of Bristol life. Given that Richard King started his career in the Chamber of Commerce as a figure leading the challenge to the Bristol elite, his success in entering that elite as Mayor and Master of the Merchant Venturers is all the more remarkable. It is striking how it was in the 1830s and 1840s that they entered the Council. Both were in their prime – Richard King was 36 when elected Councillor in 1835, William King was 35 when elected in 1841. The bedrock of their rise was their success in the expanding African trade. It was in this period that prices were approaching their highest; it was now that Kings rose to be the second largest importers of palm oil in the country. The success of their trade can also be seen in other ways. By 1850 they had both moved away from their family home with its stores and counting house at Redcliffe. In that year Richard King could be found to be living at Kensington House, Brislington, to the south of the City, while his brother had moved to Henleaze House, Westbury, to its north. Richard King remained at Kensington House to his death, while William King moved, first to Clifton during the 1850s and then to Avonside.[39]

By the 1850s the public careers of the King brothers were at their most eminent, and their business was at its height. But the 1850s were to prove something of an apogee for the African trade. The palm oil trade in fact peaked in the late 1850s. Prices of palm oil in Britain levelled off around 1860 and the oil trade entered difficulties that continued to the end of the century. The value of the trade nearly halved between 1860 and 1890 and the price of oil fell to less than £20 a ton by the late 1880s.[40]

This fall in prices was not simply part of the widespread fall in commodity prices in this period. It was primarily due to changes in demand for oils as new oils, especially hydrocarbon mineral oil discovered in the USA in 1859, came on to the market: improvements in transport also brought Australian and Asian tallow and oils into Britain in this period.[41] The fall in prices also derived from the increase in competition in the oil trade ensuing from the establishment of the steamship services in the West African trade after 1852. The commencement of the African Steam Ship Co.'s regular service between West Africa and Britain in that year – to be followed in 1869, by the British & African Steam Navigation Co. – had the effect of initiating a long term reorganisation of the structure of the West African trade.[42]

The establishment of the steamship companies had a number of important effects. First, they introduced functional specialisation into the African trade for the first time, as shipping and trading came to be divided into two distinct activities. Second, by providing cheap cargo space, the steamship services opened the West African trade to small-scale traders. They removed the high capital costs of entry which had previously restricted the African trade to those big traders who could provide their own shipping. Thus there was an influx of small-scale traders, many of them Africans, into the trade after 1852. On one estimate, the numbers of traders involved in the palm oil trade rose from some 26 in 1850 to some 150 by 1870.[43] Third, the steamship services, by operating exclusively from Liverpool, confirmed that port as the centre of the African trade. This process was reinforced by the development of railways within Britain. No longer did suppliers like Kings have a region to themselves. Consumers could rail in their oil from Liverpool: thus London's palm oil traders disappeared by the 1880s. Fourth, the steamships opened up new areas to their customers and began to call at a large number of new ports along the African coast, not least on the Ivory Coast and Gabon.[44]

This re-organisation of the African trade led to a marked increase in competition. As prices fell a number of firms went bankrupt, of which Woodward & Irvine were among the best known.[45] These pressures in turn prompted the major African traders to move towards mergers and even cartelisation in response. In 1863 the Company of African Merchants Ltd. was formed, primarily out of the old Tobin business; in 1873 the British & Continental African Company Ltd. was established. Equally, on the River Niger firms amalgamated into the Royal Niger Co. Ltd. of 1886, while the major remaining palm oil firms came to form the African Association Ltd. in 1889.[46]

These were the new market conditions that faced the King brothers after the 1860s. For Kings the steamship services were clearly a major threat. They were now having to operate in a trade that was focused on Liverpool – to which the steamship services provided cheap, fast and regular transport – at a time when prices were falling and the market as a whole was contracting. Could the old and trusted trading methods survive in these changing market conditions?

Initially, while Richard and William were still alive, Kings continued their old system of trading, operating the 'coasting' system right up to the 1880s, and relying on sailing ships to transport their produce back to Bristol.[47] It seemed to work, at least initially. According to the Customs Bills of Entry they were the second largest importer of palm oil in 1860 and still the sixth in 1865. They had ten cargoes in 1860 and these still included the range of products that Kings had always relied on to spread their risk. Their ships however remained small. They averaged 272 tons in 1860 when the Liverpool average ship was 435 tons. In 1880 their average was 319 tons against Liverpool's 973 tons.[48] Moreover, their ships were slow. A steamer could undertake the voyage to West Africa and back in around two months; 'coasting' could keep a ship out in West Africa for up to 18 months.[49] For a trade where the turn around of ones' capital was crucial, time, literally, meant money. The techniques that had worked so well as the African trade expanded were, therefore, less adequate in this era as the development of the Liverpool steamship services threatened to leave Kings marginalised.

This problem of change in the structure of the African trade was given added resonance by the question of change within the King family. By 1870 Richard King was 71 years old and William 64. In 1874 Richard died and control of the firm passed to William King and his two sons, Mervyn and Edmund. William King himself died in 1887, though he appears to have withdrawn from the firm by the early 1880s. During this period Richard's only surviving son, Thomas Poole King, was to join the business as a partner, though he seems not to have played any significant role in its management; it was Mervyn King (1844–1934) who was the dominant figure in the firm after William's death.[50]

It was thus a new generation of Kings – Mervyn, Edmund and Thomas – which had to grapple with the changes in the African trade of the late 1870s and 1880s. Clearly these were difficult times for the firm. By the 1870s the shape of the depression was becoming clear: prices for palm oil fell from £36 per ton in 1877 to £19 ten years later, at the bottom of the slump; even by 1890 it had only recovered to £21. Evidence of the difficulties Kings were facing can be seen in their appeal to the Bristol Docks Committee in 1881 for the dock dues to be reduced for African products.[51]

At the heart of the problem facing the firm was the fact that it did not operate in the centre of the African trade, the Niger Delta. Until now it had done well enough operating on the margins of it, namely in Gabon, the Cameroons and the Ivory Coast. This had the advantage of allowing Kings to avoid competing against the Liverpool traders and letting the firm rely on its tried and trusted methods of 'coasting' in areas where the firms' captains had had long experience and knew the local market. However, the opening of the coast by the steamship service and the simultaneous tightening of the market, as the second half of the century proceeded, made it increasingly necessary for the firm to adapt if it was to survive. Clearly, to continue along the lines Richard and William had pioneered earlier in the century, relying on sailing ships operating at the margins of the trade, was no longer possible at a time when the steamship service had revolutionised trading practices. The firm would have to change.

Like all African traders at this time, Mervyn King and his family had a number of alternatives as the depression began to bite. One possibility was to reduce their costs and reduce their operations; in Kings' case to concentrate on the Bristol market. The problem with this was that the Bristol market (as London before it) was contracting in the face of the steamships' concentration of the African trade on Liverpool. A second possibility was to develop new areas of trade like the Congo and Angola coast. As the steamship services already reached this area, this would have meant investment in the new technology of steamships, but Kings would then be taking on the steamship companies with their massive capital backing. A third possibility was to push inland to the sources of the oil in the interior, but this too would have required extra capital for new investment in river launches, factories and such like. It was also fraught with difficulty, given the German occupation of Cameroons in 1884, and the likely resistance the firm would meet from African middle-men.[52]

All options required painful change and would not be easy, given that Kings constituted a family firm with a restricted access to the capital that would be needed for such restructuring. This raised the whole question of the family basis of the firm and the need to raise capital in these changing market conditions. Could a family firm survive at all while all around it traders were going public in the search for capital? William's will refers to a loan of money from his son-in-law, Edmund Armstrong, in 1883 and this may not have been an isolated case in what was clearly a difficult time for the firm.[53] The decision that was taken was therefore a brave one, namely to expand the business at a time of depression and enter the heart of the trade in the Niger Delta. This was a major risk, since it involved taking on the larger firms in an area where they were already well established, at a time of falling prices. It would also require extra capital to build factories and cask houses in the Delta ports. In addition Kings' sailing ships were obsolete for the Delta trade. This meant relying on the steamship services which delivered to Liverpool and thus entering the Liverpool market for high quality oil. The move into the Niger Delta meant, in short, a major reorganisation of the firm's 60-year-old practices.

Yet Kings decided to go ahead. In 1879 they bought Queens Beach in Old Calabar, one of the major centres of the oil trade in the Delta, and began to operate there through their hulk, the *Dawstone*.[54] By 1885 they were the fourth largest firm in the river.[55] Around 1888 they moved to open in the Opobo river, by this time the largest single source of palm oil in the Delta, and indeed West Africa.[56] By 1890 their plant, stock and goods in the Delta, together with the two ships used to service them were valued at £25,000.[57] In addition they began to utilise the cost advantages of the steamship services, sending their produce to Liverpool, though Bristol remained their major market. This practice had begun from at least 1860; in that year they had four cargoes delivered to Liverpool as against 10 to Bristol, though there was a marked difference in size of cargo; 103 casks *in toto* to Liverpool as against 6,814 to Bristol. By 1880 they had 17 cargoes to Liverpool, totalling 243 casks of oil and 9 cargoes to Bristol, totalling 5,967 casks.[58]

Kings continued their old system in tandem with the Delta trade. They continued to be active on the Ivory Coast and the Cameroons in the 1880s; their Cameroons trade amounted to 378 tons of palm oil out of the 1,283 tons exported from the river to Britain in 1883 and 403 tons of palm kernels out of 897 tons.[59] They also now purchased their first steamer, the *Redland*.[60]

The move into the Niger Delta was not easy and required courage in the face of difficult trading conditions. It was, in retrospect, the only way the firm could survive as a major participant in the African trade. But it merely bought time. The overall problem of the African trade remained as the 1880s proceeded. Prices of palm oil continued to fall and reached a trough in 1887 and 1888.[61] Worse was to come with the start of the partitioning of Africa and threats to the continuation of free trade. Bismarck's occupation of the Cameroons and part of the Slave Coast in 1884 and the French occupation of the Ivory Coast in 1889 (the latter followed by the imposition of customs dues on British traders) struck right at the heart of Kings' trade in those areas.[62]

The European partition of Africa in the 1880s raised the question of the long term future for the coastal trading networks that had evolved over the previous half century and which firms like Kings had relied on for so long. With colonial conquest came the prospect of railway and road building, and annexation therefore raised the need for traders, hitherto content to remain on the coast and utilise the indigenous middle-man system, to move their trading frontier inland. As Gertzel has shown, moving inland and abandoning plant on the coast – not to mention the network of contacts and market knowledge that could hardly be quantified in monetary terms – was not a prospect that traders regarded with equanimity.[63]

It was little consolation to Kings that all of Britain's African traders were suffering from similar problems. In the mid-1880s a number of the larger African traders began to consider a merger as the answer to the trade's problems. This would have the advantage of removing competition, rationalising plant and producing a united front against competitors and the middle-men suppliers. This move towards merger began with a number of pooling agreements as traders tried to unite against the African middle-men to force prices down. One of the best known of these was in Old Calabar in 1883–86, when the seven largest firms trading in the river agreed to pool their produce; Kings received a one and a quarter share of the eight shares available.[64] Pools were difficult to maintain however and from 1886 negotiations were initiated for a general merger of the major firms operating in the Delta area.

Mervyn King was in favour of a merger from the start.[65] The chief impetus for such a merger lay in the way other businesses in West Africa were doing the same. Important in this was the impact of the emergence of George Goldie's Royal Niger Co. in 1886, and the *de facto* merger of the two steamship companies under A.L. Jones.[66] Also significant was the likely effect of the move inland when it came. In 1889 therefore, the African Association Ltd. came into being. Under the agreement of 1889 the nine largest oil traders in the Niger Delta, including Kings, merged their Delta businesses, receiving shares in the firm in return, while their businesses outside the Delta continued to function separately.[67]

Mervyn King became a director of the new company and was to be one of the four largest shareholders in it; Edmund and Thomas also received shares.[68] Not least, this shows how major a firm in the Delta trade Kings had become in a matter of years. Mervyn King remained a director of the company until his retirement in 1912 and was clearly one of its major figures. For much of that time he also served as one of the directors involved in day to day administration, serving as one of six directors on the General Purposes Committee between 1891–93 and from 1896 onwards.[69] He must have been living in Liverpool for much of this time since the Committee met three times a week. He was also one of the four directors responsible for negotiating an abortive merger with the Royal Niger Co. in 1896.[70]

The move into the Delta trade marked a major change for Kings. With it Kings had in effect accepted that Liverpool was the centre of Britain's African trade and that Bristol's role was virtually finished. But there was no alternative. Not least among Bristol's problems was the impact of American competition on the South Wales tinplate industry and the decline of the city's soap industry.[71] Although the move into the Delta was shortlived for Kings – a mere ten years – the decision was clearly the right one, not least because it ensured Kings were in a good position when the merger of 1889 did occur.

However, while the amalgamation of 1889 solved the problem of the Delta business for Kings there still remained their business outside of the Delta, in the Ivory Coast and Cameroons. Here Kings had to adjust to the impact of French and German political control. A series of protests were sent to the Foreign Office by Kings in 1890–92 to protest against French actions on the Ivory Coast.[72] On the Ivory Coast the French insisted that British traders build depots on land in order that their trade could be more easily taxed: this spelt the death knell of the old 'coasting' system Kings had relied on.[73] They also imposed differential dues on the British traders of the area from 1897. There was a further problem which European political expansion brought, namely the development of railway and road building into the interior, as the colonial administrations began to open up their colonies to European traders and bypass the old middle-man system. For those traders well established on the coast these developments threatened to make redundant the traditional supply networks they had relied on. Thus during the 1880s and 1890s Kings had to move inland from the Cameroons estuary, and away from the coastal system the firm had utilised so successfully for so long. This required land purchases, the building of new stores and involvement in retailing to a much greater extent than ever before. By the start of the new century Kings had reached some 225 kilometres from the sea, though competition from German firms in Cameroons in this period remained intense; the Cameroons palm kernel trade passed almost exclusively into German hands.[74]

This was not an easy period for the firm. In 1911 Kings were incorporated as a private company, Richard & William King Ltd., with a nominal capital of £100,000 and paid up capital of £62,434. The bulk of both the ordinary and preference shares – over half – were held by Mervyn King and his son Charles and daughter Mary; Mervyn, Charles, Mervyn's brother Edmund and Duncan McPherson were the directors of the firm, with the latter as managing director.[75] The appointment of McPherson, the first figure from outside the family to manage the firm, was a sign of the times. With Mervyn and Edmund ageing, and Charles soon to take up a career in the Army, the King family were approaching 'third generation' problems in the management of their business.[76]

War added further problems. For a firm much of whose activities lay in German territory, the outbreak of war in 1914 was a severe blow. Their agents in the Cameroons were interned.[77] But the ending of the war meant difficult choices faced the firm. The economy of West Africa was being transformed by railway and road building and the steamship; trade in the interior was being opened up. In this era of expansion and restructuring there was no place for a small firm like Kings. The African trade by this time was about to be amalgamated between two giants, the Niger Co. (soon to pass into William Lever's control) and the African & Eastern Trading Corporation (including the African Association).[78] Mervyn King began to negotiate the sale of the firm. In 1918 Lever offered him £111,300 for the firm's business in Ivory Coast and Cameroons and he decided to take it.[79] A century after Thomas King opened trade on the Gabon coast, Kings became part of Lever's empire; in 1929 they became part of his United Africa Co. Ltd. and thus eventually, Unilever. The Bristol office of Kings was closed down on purchase, though the name of Kings continued to be used by the enterprise in the Cameroons thereafter.

It has been suggested that the price Mervyn King accepted was derisively small and certainly, compared to the price Lever paid for other African firms at this time, it appears to be so. But as Pedler has argued, it is hard to see what alternative Mervyn King had in 1918, beyond a radical restructuring of the firm's activities and a massive injection of outside capital.[80] Even then it was by no means assured that Kings could survive in a trade dominated by the two big conglomerates. Mervyn King himself was 74 years old in 1918. While he had an heir, and there were other members of the family, sons of Edmund, available to run the firm, it is clear that Mervyn King saw little future for the business.[81]

For all that, the King family had been remarkably successful in its African business. For a good deal of the nineteenth century they were among the biggest African traders in Britain, despite being located outside of the heart of the trade. They had faced difficult decisions and their longevity is testimony to their success in responding to them. They successfully restructured to take account of the changes brought about in the African trade in the late nineteenth century. Unlike the other pioneers of the early nineteenth-century African trade – the Tobin brothers, Charles Horsfall, Thomas Harrison, Stuart & Douglas – they survived through into the new century as an independent business, the only example of a firm from the 1830s African trade to do so. Given the pressures the trade went through in the 1880s this was no mean achievement.

NOTES

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1. P.N. Davies, 'The African Steam Ship Co.', in J.R. Harris (ed.), *Liverpool and Merseyside*, (1969); P.N. Davies, *The Trade Makers* (1973); idem (ed.), *Trading in West Africa, 1840–1920* (1976); idem, 'The Impact of the Expatriate Shipping Lines on the Economic Development of British West Africa', *Business History*, Vol.19 (1977), pp.3–17; A.J.H. Latham, *Old Calabar*, 1600–1891 (Oxford, 1973); idem, 'A Trading Alliance: Sir John Tobin and Duke Ephraim', *History Today*, Vol.XXIV (1974), pp.862–67; B.K. Drake, 'Continuity and Flexibility in Liverpool's Trade with Africa and the Caribbean', *Business History*, Vol.18 (1976), pp.85–97; M. Lynn, 'Change and Continuity in the British Palm Oil Trade with West Africa, 1830–1855', *Journal of African History*, Vol.22 (1981), pp.331–48; idem, 'From Sail to Steam: The Impact of the Steamship Services on the British Palm Oil trade with West Africa, 1850–90', *Journal of African History, Vol.* 30 (1989), pp.227–45.
2. M. Lynn, 'Bristol, West Africa and the Nineteenth-century Palm Oil Trade', *Historical Research*, Vol 64 (1991), pp.359–74.
3. The only exception to this, although unpublished, is C. Gertzel, 'John Holt. A British Merchant in West Africa in the Era of Imperialism' (unpublished D. Phil thesis, University of Oxford, 1959). The only work touching on Kings is F. Pedler, *The Lion and the Unicorn in Africa; The United Africa Company, 1787–1931* (1974), pp.8–26, 151–56 and, briefly, idem, 'Builders of the West African Trade: The King Family', *Elder Dempster Magazine*, Vol.6 (March 1927), pp.10–11.
4. Pedler, *Lion and Unicorn*, pp.9–11; 'The Merchant Kings', *Bristol Evening Post*, 25 May 1945.
5. Pedler, *Lion and Unicorn*, pp.14–16. See the memorial plaque to Thomas King and Sarah Poole in the church of St Mary Redcliffe, Bristol.
6. PRO, FO 403/4, R. and W. King to Stanley, 7 June 1842, in Hope to Canning, 6 July 1842, R. and W. King to Aberdeen, 3 March 1843.
7. *Mathew's Bristol Directory*, 1833. See plaque on King Wharf (now Phoenix Wharf) in Bristol harbour.
8. W.G. Neale, *At the Port of Bristol Vol.I, Members and Problems 1848–1899* (Bristol, 1968), pp.114–19.
9. J. Sanders, 'Palm Oil Production on the Gold Coast in the Aftermath of the Slave Trade: A Case Study of the Fante', *International Journal of African Historical Studies*, Vol.15 (1982), p.49.
10. N. Stilliard, 'The Rise and Development of Legitimate Trade in Palm Oil with West Africa' (unpublished M.A. thesis, University of Birmingham, 1938), esp. pp.30–42; B.K. Drake, 'Liverpool's Trade with Africa' (unpublished M.A. thesis, University of Liverpool, 1974), esp. p.127.
11. A. McPhee, *The Economic Revolution in British West Africa* (1926), p.31, W.E. Minchinton, *The British Tinplate Industry* (Oxford, 1957), p.55.
12. P.P. 1845 XLVI (187), 481.
13. P.P. 1866 LXXIII (3675), 26–27; 1890–91 LXXXIX (6457), 56; McPhee, *Economic Revolution*, p.33; A.G. Hopkins, *An Economic History of West Africa*, (1973), p.132; J.D. Hargreaves, *West Africa Partitioned, I: The Loaded Pause 1885–89* (1974), p.252. It should be noted that to some extent this fall in the palm oil trade was taken up by the growth in the palm kernels trade, palm kernel oil being used to manufacture margarine as well as soap, but Kings were not major kernel traders.
14. Latham, 'Trading Alliance' passim; Lynn, 'Change and Continuity', pp.344–45.
15. Latham, *Old Calabar*, pp.79–80.
16. PRO, FO 403/4, R. & W. King to Stanley, 7 June 1842, in Hope to Canning, 6 July 1842, R. and W. King to Aberdeen, 3 March 1843.

17. PRO, FO 84/1031, Campbell to Clarendon, 5 Jan. 1857, 31 Aug. 1857; Bristol Chamber of Commerce, *Annual Report for 1897–98*, pp.106–07; J. Harford, 'A Voyage to the African Oil Rivers 25 Years Ago', Appendix II in M.H. Kingsley, *West African Studies* (1899), pp.567–611; Pedler, *Lion and Unicorn*, p.19; M. Johnson, 'By Ship or by Camel: The Struggle for the Cameroons Ivory Trade in The 19th Century', *Journal of African History*, Vol.XIX (1978), pp.539–49. A sign of the importance of the Cameroons trade for Kings was the fact that Kings arranged for the education in Bristol in 1869 of the son of King Bell, one of the Kings of the Cameroons river. FO 541/16, Dowell to Admiralty, 10 Jan. 1869.
18. Lynn, 'Bristol, West Africa', pp.363–5. Why the 'harder', low quality palm oil should suit the Bristol market is unclear.
19. This can be seen in the *Customs Bills of Entry* returns: Lynn, 'Change and Continuity', p.343.
20. Lynn, 'Bristol, West Africa', p.363. A description of 'coasting' by a crew member on one of Kings' ships can be found in J.C. Langdon, 'Three Voyages to the West Coast of Africa, 1881–84', MS in Bristol Central Library.
21. Davies, *Trading in West Africa*, p.98; J.C. Langdon, 'Barter Trade from Bristol Ships, West Coast of Africa, Fifty Years Ago', MS in Bristol Central Library.
22. Langdon's coasting voyage in 1881–82 took 18 months. Langdon, 'Three Voyages, First Voyage', pp.1–27.
23. Langdon was involved in coasting in the 1880s, though there is evidence that by the 1890s on the Ivory Coast at least, Kings had ceased the practice: M.H. Kingsley, *Travels in West Africa* (1897), p.632.
24. PRO, FO 403/4, R. & W. King to Aberdeen, 11 Sept. 1843, 29 July 1844, 21 Dec. 1844.
25. Quoted in Bristol Chamber of Commerce, *Half Yearly Report to July 1853*, pp.15–16. Richard King was also involved in the African Civilisation Society in this period. Buxton Papers, Rhodes House, Oxford, Innes to Buxton, 21 Dec. 1840, Vol.20.
26. Lynn, 'Change and Continuity', pp.344–45. Kings were not the only African traders in Bristol; the other major firm was Lucas, Gwyer & Lucas, but it was never to achieve the prominence of Kings.
27. Davies, *Trading in West Africa*, p.174.
28. Calculated from the *Customs Bills of Entry*.
29. Lynn, 'Bristol, West Africa', p.362; C. Harvey and J. Press, 'Industrial Change and the Economic Life of Bristol since 1800' in C. Harvey and J. Press (eds.), *Studies in the Business History of Bristol* (Bristol, 1988), pp.1–32.
30. Neale, *Port of Bristol I*, pp.118–19.
31. S.J. Diaper, 'Christopher Thomas & Bros. Ltd. – the last Bristol Soapmakers', *Transactions of the Bristol and Gloucestershire Archaeological Society*, Vol.105 (1987), pp.223–232; Harvey and Press, 'Industrial Change and the Economic Life of Bristol' in Harvey and Press (eds.), *Business History of Bristol*, pp.7–8.
32. Richard married twice; once to Penelope Austin (1811–49) by whom he had three children who did not survive infancy, and once to Annie Sidon who bore him two children, Alice Mary and Thomas Poole. Memorial plaque in the Church of St Mary Redcliffe, Bristol.
33 L. Burton, *Trade and Commerce of the City and Port of Bristol* (Bristol, 1876), p.15; Bristol Chamber of Commerce, *Annual Report for 1839*.
34. Neale, *Port of Bristol I*, pp.9, 11, 114–17; D. Large (ed.), *The Port of Bristol, 1848–84* (Bristol, 1984), pp.1, 3, 38.
35. Large, *Bristol*, pp.1, 3, 38.
36. William married Victoria Kersteman and had five sons and two daughters, of whom Mervyn Kersteman Poole and Edmund Ambrose were to follow him into the business. He died on 13 Sept. 1887 and his Will is available in the Principal Registry, Family Division, the High Court (hereafter Somerset House). Pedler, *Lion and Unicorn*, pp.24–5; A.B. Freeman, *Bristol Worthies* (Bristol, 1909), p.49.
37. William was also elected Master of the Merchant Venturers, 1850, and was Sheriff 1871–72, Neale, *Port of Bristol I*, pp.118–19.

38. Neale, *Port of Bristol I*, pp.114–17; Freeman, *Bristol Worthies*, p.48; 'The Merchant Kings', *Bristol Evening Post*, 25 May 1945; *Bristol Times & Mirror*, 28 Sept 1874. Richard King died on 26 Sept. 1874 and his Will is available in Somerset House.
39. *Mathew's Bristol Directory*, passim.
40. Hargreaves, *Loaded Pause*, p.252
41. McPhee, *Economic Revolution*, p.33; Hopkins, *Economic History*, p.133.
42. Initially the ships of the African Steam Ship Co. operated from London, but they switched to Liverpool from 1856. P.N. Davies,.'African Steam Ship Co.', pp.212–19.
43. Lynn, 'Sail to Steam', p.242.
44. Ibid., p.240.
45. John Holt Papers, Rhodes House, Oxford (hereafter JHP), 15/1, John Capper to John Holt, 1 Aug. 1878.
46. P.P. 1864 XLI (424), 581; J.E. Flint, *Sir George Goldie and the Making of Nigeria* (1960), pp.34–87; Pedler, *Lion and Unicorn*, p.139.
47. Langdon, 'Three Voyages, Third Voyage', p.6.
48. Calculated from the *Customs Bills of Entry*.
49. Most sailing ships tended to be absent from Britain for less than this; 18 months was the time taken by J.C. Langdon's ship in 1881–82, 'Three Voyages, First Voyage', pp.1–27.
50. JHP, 3/10, Mervyn King to John Holt, 15 May 1889; J.J. Rankin, *The History of the United Africa Co. Ltd. to 1938* (privately printed, 1938), p.58 n.1. Thomas King is described as 'gentleman', unlike his cousins, in the list of shareholders of the African Association, 26 October 1889, held at Companies House, London, 29140. Thomas was not to be a shareholder of Richard & William King when the firm was incorporated in 1911.
51. Large, *Port of Bristol*, p.190.
52. For a broader analysis of the options facing British firms in West Africa in this period, see C. Newbury, 'On the Margins of Empire: The Trade of Western Africa, 1875–90', in S. Forster, W.J. Mommsen and R. Robinson (eds.), *Bismarck, Europe and Africa: The Berlin Africa Conference, 1884–85 and the Onset of Partition* (Oxford, 1988) pp.35–58, esp. 50–52.
53. Somerset House, William King's Will.
54. PRO, FO 84/1630, R. & W. King to Kimberley, 23 Jan. 1882; FO 403/171, African Association to Salisbury, 16 Jan. 1892.
55. JHP, 3/11, 'Old Calabar agreement', c.1885.
56. JHP, 3/7, Goldie to Holt, 16 Jan. 1888; FO 84/2072, Rogerson to Salisbury, 7 Jan. 1890.
57. United Africa Company Archives, UAB/2/8, Agreement between R. & W. King and the African Association, 23 May 1890.
58. Calculated from the *Customs Bills of Entry*.
59. FO 84/1681, memo respecting the trade etc. of the Cameroon River, by Hewett, 17 Dec. 1883.
60. United Africa Company Archives, UAB/2/8, Agreement between R. & W. King and the African Association, 23 May 1890.
61. Hargreaves, *Loaded Pause*, p.252.
62. FO 403/48, R & W. King to Granville, 23 Dec 1884, FO 84/2243, R. & W. King to Salisbury, 11 March 1892. See also the copies of King's correspondence to the Foreign Office in JHP, 10/3.
63. C. Gertzel, 'Relations between African and European Traders in the Niger Delta, 1880–96', *Journal of African History*, Vol.III (1962), pp.361–66.
64. JHP, 3/11, 'Old Calabar agreement', c.1885; Gertzel, 'John Holt', pp.206–11.
65. JHP, 3/10, Mervyn King to Holt, 16 Aug. 1886.
66. P.N. Davies, *Sir Alfred Jones*, (1976), pp.31–46.
67. Rankin, *United Africa Company*, pp.73–85; Pedler, *Lion and Unicorn*, pp.139–50.
68. See the returns in Companies House, London, 29140.
69. His activity is outlined in the Committee Minute Book of the African Association Ltd., United Africa Company Archives, UAA/1/20.
70. JHP, 3/10, Mervyn King to Holt, 24 Oct. 1896.

71 Minchinton, *Tinplate*, p.58; Diaper, 'Christopher Thomas', p.228.

72. Bristol Chamber of Commerce, *Annual Report for 1890*, pp.14, 90–2; This correspondence is preserved in JHP, 10/3, 'Correspondence between the Bristol Chamber of Commerce and the Foreign Office'.

73. Bristol Chamber of Commerce, *Annual Report for 1897–98*, 14, pp.106–7.

74. Pedler, *Lion and Unicorn*, p.151–56.

75. Return for 19 Oct. 1911, Companies House, London, 118097. The shareholders were Mervyn King, Charles King, Mary Taylor (daughter of Mervyn), Edmund King, Bessie King (wife of Edmund) and Duncan McPherson. The major shareholders were Mervyn and his brother Edmund, though Charles had the largest holding of preference shares. With the exception of McPherson, all these were descendants, or married to descendants, of William King; Richard King's family no longer had any connection with the firm.

76. McPherson owned 3,000 (9.7 per cent) of the 31,000 preference shares of the firm and 7,000 (20 per cent) of the 35,000 ordinary shares; this was approximately half the holding of Mervyn King and close to that of Edmund King, Return for 19 Oct. 1911, Companies House, London, 118097.

77. Pedler, *Lion and Unicorn*, p.153.

78. Rankin, *United Africa Company*, pp.99–109; Pedler, *Lion and Unicorn*, pp.225–39.

79. Rankin, *United Africa Company*, pp.92–3; Pedler, *Lion and Unicorn*, p.154.

80. Pedler, *Lion and Unicorn*, pp.154–5. This would also have involved moving Kings' head office to Liverpool; in 1898 the firm had moved from its old headquarters at Redcliffe Parade to Little King Street, Bristol. JHP, 6/4, 'West Africa Merchants'.

81. 'The Merchant Kings', *Bristol Evening Post*, 25 May 1945; *Illustrated Bristol News*, 16, 121 (1969). Mervyn King's Will is available in Somerset House: his estate was valued at 45,000.

Employers and Craft Unionism: A Programme of Action for British Shipbuilding, 1902–5

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The impact of trade union restrictions upon industrial performance has been a matter of controversy in Britain for the last hundred years. In the United States, during the opening years of this century, employers acted decisively to rid themselves of union restrictions, and it has been argued that in this same period British employers were presented with an opportunity to act in similar fashion. Taking the case of the British shipbuilding industry, this article examines the extent to which such an opportunity was in fact perceived by employers. To the extent that it was perceived, the article also investigates the reasons for inaction.

In discussions of the relative decline of the British economy during the twentieth century much emphasis has been placed on rigidities in economic and social institutions inherited from the Victorian era. It is held that in the British case movement to mass production methods and corporate forms of management organisation was inhibited by institutional structures that had become entrenched during the period of competitive capitalism in the nineteenth century.[1] Such structures are seen as operating in the fields of finance, education, industrial relations and enterprise and market organisation. So far as the institutions of industrial relations are concerned, the apparent weakening in the position of British trade unions in the 1980s has triggered a vigorous debate concerning the impact of trade union restrictionism on productivity performance. While the focus of this debate is on the very recent past, by implication it obviously raises questions concerning the long-run impact of unionism. If, as is alleged, the slackening of the unions' hold in the 1980s contributed to improved economic performance, it follows that failure to reform the institutional structures of industrial relations at an earlier date imposed some constraint on growth.[2] The above claim is, however, hotly contested. Various writers have argued in general terms that union effects on labour productivity are positive rather than nega-

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tive, and in an historical case study of the British shipbuilding industry Hilditch and Reid claim that their preliminary data provide no support for the argument that unions have exerted a negative impact on labour productivity.[3] As the above authors suggest, shipbuilding is in many respects the classic case for any investigation of links between trade unionism and reduced efficiency over the long-run. The industry's characteristics included high union density, multiple unionism, a high propensity to strike, and a form of work organisation that was heavily reliant on unionised skilled manual labour and that remained basically unchanged from the late nineteenth to the mid-twentieth century. The Hilditch and Reid claim is, then, a bold one and might seem to be at variance with what is perhaps the received view of the impact of institutional structures in this industry. However, in an important analysis of institutional influences in British shipbuilding's twentieth century decline, Lorenz and Wilkinson accorded trade unionism 'no more than a secondary role'.[4] Indeed, as we shall see, these writers stressed the positive contributions of unionism during the period of the industry's competitive success before 1914. While the essence of their argument was that organisational and industrial relations structures associated with nineteenth century success contributed to failure under changed technical and demand conditions in the twentieth century, it was not the structures of industrial relations that were seen to be at the heart of the problem. The fundamental weakness lay in the small scale and lack of specialisation of firms in the industry.

I

The debate on the impact of institutional structures inherited from the past will go on, and in that debate the role of trade unions in particular is likely to remain controversial; union restrictive practices were indeed a matter of heated public controversy even at the turn of the century. One significant aspect of the question worthy of further exploration concerns employers' own perceptions of their situation, and here again shipbuilding provides an interesting case. Although the industry's competitive success pre-1914 is undoubted it was, nevertheless, during this period that shipbuilding employers considered the possibility of launching a co-ordinated assault on craft unionism. A programme was devised in 1902 and after much debate was formally adopted by the industry's national employer organisation. Momentum faltered in 1904 and by 1906 the moment had passed. Interpretation of this episode raises some interesting questions, both for shipbuilding and indirectly for industry as a whole. Was it a turning point, a moment of strategic choice in which an opportunity existed to transform the structures of industrial relations and with them the long-run prospects of the industry? Was the apparent element of choice illusory, with the negative outcome pre-determined by the strength of entrenched institutional structures? Or should the negative outcome be seen as a 'correct' choice in the sense that, as Lorenz and Wilkinson imply, from the employers' standpoint a strong union presence conferred benefits as significant as costs? In this paper we shall examine the circumstances in which the employers' programme emerged and why in the event it was not pursued. In so doing, it is hoped that some light will be thrown on the above questions.

In examining employer perceptions and policy outcomes in the field of industrial relations, we may take as a starting-point Lorenz and Wilkinson's assessment of the costs and benefits of trade union organisation in shipbuilding before 1914.[5] As the sophistication of ships increased, employers responded by widening the range of trades involved in the construction process. To the shipwrights, joiners, blacksmiths and sawyers, who predominated in the days of wooden construction, were added the various boilermaking trades, sheet metal workers, engineers, plumbers, electricians and numerous other groups. A cost imposed on employers in consequence of this proliferation of trades was inflexibility in the allocation of work. Demarcation lines imposed by unions operating in the various trades proved particularly irksome as changed production methods and new materials blurred distinctions between them. In addition to restricting the employers' freedom to deploy labour across trade boundaries, unions also limited their capacity to avail themselves of cheaper, non-craft labour in circumstances where the simplicity of the tasks to be performed might have made this appropriate. Potential sources of cheap labour were apprentices and semi-skilled adults. In the case of the former, craft unions endeavoured with some success to control entry into their respective trades. In the latter case, their policy was to capture labour-saving machinery, insisting on the employment of union members at skilled rates and customary manning levels. These are the limitations emphasised in Lorenz and Wilkinson's account, and in the judgment of these writers they were to some degree offset by benefits that flowed from the unionisation of the industry. In essence, the argument here is that unions helped to sustain a system of craft-based production that worked well under conditions prevailing down to World War I. In an industry subject to extreme fluctuations in demand, employers placed primary reliance on ample supplies of skilled labour that could be hired or fired as market conditions dictated. The system was one in which employment relations were largely externalised, with much of the responsibility for training, placing and maintaining the workforce being assumed by the unions.[6] Thus unions provided health and unemployment benefits, acted as labour exchanges, and protected the position of apprentices, thereby contributing to the orderly transmission of skills. The system of trade specialisation institutionalised by the unions is also held to have had positive effects, offsetting the inflexibility noted above. Concentration of British shipyards in certain regions enabled employers as a group to provide some degree of continuity of demand for the range of trades represented in the industry; workers moving from yard to yard as their respective skills were required by the stage of construction a vessel had reached. In this manner, it is argued, firms whose scale of production was relatively small were able to capture the economies of scale of trade specialisation. More flexible systems of labour deployment, in operation in competing countries, 'sacrificed the benefits of a fine division of labour'. Finally, though only indirectly associated with union organisation, there was the reliance placed by employers on their skilled labour for the detailed organisation of production.

The degree of correspondence or variance between the above assessment and the actual perceptions of employers during the period cannot be simply determined. In shipbuilding, as in other industries, there existed a diversity of viewpoint.[7] This was to some degree a matter of general differences in outlook as between the various regions in which the industry was concentrated. The contrast between the two principal regions, the Clyde and the English north-east coast, was particularly marked. In general, shipbuilders in the north-east shared with other employers in the region a relatively positive attitude towards trade unionism; accordingly recognition, even of labourers' unions, was widespread by 1900 and there existed a highly developed collective bargaining system in shipbuilding and other industries. On the Clyde, and to some extent throughout Scotland, attitudes were much less positive. In shipbuilding, union recognition, for skilled groups only, was a relatively recent phenomenon in the 1890s and the system of collective bargaining was undeveloped by comparison with the north-east. Although the origins and significance of the contrast obviously extend beyond the confines of any single industry, its bearing on employer attitudes towards unions in shipbuilding was considerable. Typically, Clyde shipbuilders were readier to emphasise union restrictions on their freedom of action than were builders in the north-east. Reinforcing, though sometimes also cutting across, regional differences were variations in outlook associated with differing product markets, and in turn, size of firm and capital intensity. In this regard, the main distinction lay between large liner and warship builders on the one hand, and builders of ordinary cargo vessels on the other. On the three rivers of the north-east, the Tyne, Wear and

Tees, the great bulk of yards were given over to construction of cargo steamers, whereas on the Clyde there was a considerable concentration of liner and warship builders. Regional specialisation was by no means complete, however, with famous warship builders being located on the Tyne and major cargo vessel producers on the Clyde. For a variety of reasons, but more especially because of their greater capital intensity, liner and warship builders possibly exhibited greater impatience towards union-imposed restrictions than the ordinary run of employers in the industry. Finally, as Reid has noted, differences of opinion could arise even between employers in the same region and product market.[8]

Recent writers on labour relations in shipbuilding and industry generally during this period have tended to be impressed by the evidence of diversity of attitude amongst employers, and have emphasised the extent to which this immobilised them in any possible endeavour to confront union influence.[9] In the particular context of this paper, such diversity certainly complicates the task of relating a retrospective assessment of union impact to actual perceptions of the situation at the time. Nonetheless, it was the case that the opening years of this century witnessed an attempt by shipbuilders to arrive at a consensus regarding the sort of industrial relations system they wished to see in operation. Since, in the event, action was not taken on the programme that was devised, it is hard to know what level of consensus was actually achieved; or perhaps more pertinently, whether inaction was itself the result of disunity. While recognising these problems in advance, we would still contend that this episode is capable of throwing light on the employers' perspective on industrial relations at a critical juncture in their development.

II

The idea of a broad review of the conditions of labour management in shipbuilding may be traced to Wigham Richardson, the Tyne shipbuilder whose firm merged with Swan Hunter in 1903. In the 1890s Wigham Richardson had been an advocate of co-operation between shipbuilders and shipowners, organised in the militantly anti-union Shipping Federation.[10] Between November 1901 and January 1902 there appeared in *The Times* a well known series of articles by E.A. Pratt on union restrictions in a range of industries including shipbuilding.[11] It may be no more than a matter of coincidence, but on January 24th 1902 Wigham Richardson wrote to the Tyne Shipbuilders' Association (TSA) proposing the establishment of a joint committee representative of the various shipbuilding districts to review the labour situation in the industry. The idea was taken up by the Tyne Association and the other districts were contacted.[12] The reception appears to have been generally favourable but there was clearly no sense of urgency concerning the establishment of such a committee, which still had not met at the beginning of August. In the event, it was the pressure for wage adjustments in the short-run that brought the proposed programme of action for the long-run into focus.

Despite the formation of a national employers' organisation in the industry in 1899, until 1907 alterations in general wage levels were negotiated with the unions on a district basis.[13] Although the case for co-ordinated action on wage questions was clearly recognised by employers, variations in the timing and intensity of cyclical fluctuations as between the different regions was one among a number of problems that delayed its achievement. In the spring of 1902, as the turn of the century boom faded, employers on the north-east coast decided that wage reductions were necessary and, further, that joint action with the Clyde would be desirable. With signs of a downturn much less evident in the latter district, the response was unenthusiastic. The proposal for joint action did, however, bring into focus the general issue of labour management, placed on the industry's agenda by Wigham Richardson. Discussion at a meeting of the Clyde Shipbuilders' Association (CSA) revealed that employers were not, at this juncture, prepared to face a stoppage 'on a simple question of wages' alone. So far as the pieceworking boilermaking trades were concerned, the general view was that any advantage gained by the employers through a reduction would be of short duration. The feeling emerged that the 'real' gains in labour costs were obtainable only through action on 'the larger and more serious questions of proper yard discipline and management', and that, accordingly, the wages question should only be taken up in conjunction with these longer-run issues.[14] The Clyde's attempt to link the wage and management questions was not successful. The north-eastern associations were determined to press ahead with demands for immediate reductions, and by the end of October 1902 these had been conceded by most of the shipyard trades. On the Clyde itself tensions developed, as firms operating in the more competitive product markets began to feel the effects of the downturn. Thus Russell & Co. of Port Glasgow, a specialist builder of tramp vessels, protested against 'the two questions being linked together'. In its judgement, the wages issue was for the moment the more important, and required immediate action.[15] Notices for wages reductions in all the shipyard trades were in fact issued on the Clyde in December.

Though the pressures of the short-run had prevailed, the larger issues that had been raised remained live. In October 1902 there occurred an exchange of letters between the Clyde and north-eastern associations, setting out their respective views on the labour management question.[16] The CSA's programme envisaged a major assertion of managerial control through the introduction of the open shop; the deployment of unskilled labour on new machinery; the detachment of foremen from union influence; and discretionary powers to introduce piecework, pay less than minimum time rates for certain categories of worker and sub-divide the work process where this was felt to be desirable. Throughout, the emphasis was on permanent savings in labour costs obtainable through removal of union imposed restrictions. The ending of the closed shop was seen to be of particular significance for the assertion of management control. The response of the north-east coast was broadly in accord with the Clyde, though it was noticeable that the open shop was omitted from its list and the proposed use of non-craft workers confined to a 'certain number' only. A major, though unspoken, point of difference concerned labour recruitment. For a prominent Clyde employer writing to the CSA it was 'understood that there should be no limitation on apprentices in any way, either in age, number, training or anything else', and indeed it was the association's policy actively to promote an increasing number of apprentices in the industry.[17] By contrast, north-eastern employers generally regarded themselves as bound by the national apprentice agreement covering the boilermaking trades that imposed an age limitation and purported to offer the union a guarantee against excessive recruitment. Since the issue was the source of considerable controversy within the national Shipbuilding Employers' Federation (SEF) at this time, it posed a clear threat to the achievement of consensus on a programme of action. Hence, one presumes, the decision to bypass it at this stage.

The outcome of the exchange of views was a crucial meeting between the CSA and the three north-eastern associations, held in Edinburgh on 17 October 1902. The chair was taken by John Inglis, a Clyde shipbuilder who had been involved from the outset in formulating policy in this sphere. In addition to points covered in the preceding correspondence, the meeting took as the basis for its discussion the provisional agreement concluded in the engineering industry between the Engineering Employers' Federation (EEF) and the Amalgamated Society of Engineers.[18] This agreement had been reached in November 1901, and represented an attempt by the engineers to secure some modifications to the Terms of Settlement that ended the engineering lock-out of 1897–98. As is well known, that settlement had provided for a sweeping assertion of managerial authority in engineering, and the concessions secured by the union in 1901 were limited. The agreement was in fact rejected on a ballot of the membership. Nonetheless, shipbuilders took it as a model for dealings with craft unions in their own industry. In this connection, it must be recalled that the links between the engineering and shipbuilding industries were extremely close, with the marine section of the former being of course located in the shipbuilding districts, and many of the larger firms straddling both industries. Out of the meeting there emerged a first draft of a set of recommendations and resolutions, at this point somewhat imperfectly adapted to specific conditions prevailing in the shipbuilding industry, but already containing the essential elements of a programme that remained little modified throughout subsequent extensive discussion.[19]

Turning to the content of this programme, it does not, on the face of things, appear that an attempt was being made to match the belligerent anti-union policies being pursued by American employers at this period. While the twin principles of freedom of management and freedom of employment were asserted at the outset, in both cases they were qualified in such a way as to imply a continuing role for trade unions; thus freedom of management was not construed as applying to the regulation of working hours or general wage changes, while within the setting of the open shop it was stated that the employers' federation would not countenance active discrimination against unionists by member firms. Whether the Boilermakers' Society could have taken this latter assurance seriously, in view of its experience with the SEF's guarantee against the overstocking of apprentices, is a nice question. Apart from the above qualifications, other aspects of the programme also implied an acceptance of some union functions. In the preamble, it was envisaged that conferences on the establishment of the new conditions would take place with the various unions. The programme itself assumed union participation in an industry-wide disputes procedure. Finally, as the authors of the scheme were at pains to point out to their constitutents, the proposals were 'practically the same' as the conditions of management already prevailing in engineering; and in that industry unions retained negotiating rights. On the other hand, a number of the provisions appeared to strike at the institutional foundations of craft unionism. Employers were to have the right to select, train and employ those they considered best adapted to the various operations conducted in their yards, irrespective of existing lines of demarcation. Regarding new machinery, they were to have full discretion to utilise the men they considered suitable for machine operations and to determine the conditions under which they worked. All restrictions on number and age of apprentices were to go, though as a compromise this was subject to the expiration of the existing agreement. Perhaps less fundamental, but striking at the unions' regulatory power, were employer rights to pay less than minimum rates for workers at either end of the age range and to introduce piecework in cases where it was not currently in operation. Other provisions envisaged an extension of managerial control over work operations and a tightening of labour discipline. Foremen's membership of unions was ruled out. Employers were to be at liberty to sub-divide or sectionalise plating and other work, undermining the self-regulation of craft work groups. Further, a range of options was reserved for the discretion of local associations. These were the withholding of a percentage of piecework earnings as a sanction against bad work or lost time, revision of piecework rates in cases where improved handling or other equipment had inflated earnings, the introduction of time cards, and the possibility of suing workers for time lost. In all this was a formidable shopping list, and while, as noted above, most of these conditions were held to apply already in the engineering industry, it should be noted that craft practices in shipbuilding were more securely established than had been the case in engineering prior to the lock-out, so magnifying the potential resistance such a programme was likely to encounter.

Following the Edinburgh meeting, a joint committee was formed, representing all the local associations connected with the SEF; copies of the proposals were then sent to individual firms and comments invited.[20] During November and December a round of special local association meetings took place, and by the start of 1903 the process of consultation was largely complete. It seems clear that it had always been the intention to refer the issue formally to the SEF when there was some assurance that action was a practical proposition, and the joint committee took this step in May. The programme, which by this stage had assumed the form of a model agreement to be concluded with the various unions, was accepted by the federation's Executive Board in August. At this point there was every indication that the industry intended to take immediate action to secure its implementation. A special committee was appointed 'with power to conduct the necessary negotiations with the trade unions and report, leaving the Federation to take any action that may be desirable'.[21] The committee included some of the most prominent employers in the industry and its chairman, Inglis, was shortly to become SEF President. It decided that the unions to be dealt with in the first instance should be the Boilermakers, Shipwrights, Joiners, and Blacksmiths, and that the proposed conditions should be submitted to these organisations along with a 'suitable' covering letter. A draft letter was actually approved by the committee in January 1904, but it was never sent.[22] Instead of opening negotations with the unions, as instructed, the committee referred the question back to the Executive Board.

An issue had arisen that, in the end, was to provide the ostensible reason for the industry's failure to act on its programme. Several of the unions it proposed to confront had a sizeable membership outside of shipbuilding, that could be used to finance resistance. The position of the Boilermakers' Society, with a substantial membership in boilershops and bridgeyards within the EEF's jurisdiction, was especially critical. The issue of co-operation with the EEF in relation to dealings with the Boilermakers had been raised at an early stage in the framing of the programme, and one district had subsequently declared such co-operation to be 'imperative'.[23] Nonetheless, within the special committee established by the SEF there appears initially to have been an inclination to proceed without a prior assurance of support. This position changed in January 1904 when, in referring matters back to the Executive, the special committee also took a definite decision to invite the EEF's participation in 'joint action and mutual support', with a view to introducing the conditions in boilershops and bridgeyards as well as shipyards.[24]

The internal politics of the EEF during this period have been closely scrutinised by Zeitlin, who has emphasised the lack of cohesion within the organisation, and its consequent inability to secure united action even within the engineering industry itself at any point between 1898 and 1922.[25] It would appear to follow that the likelihood of active collaboration with the SEF was remote. Conditions in boilershops and bridgeyards were bound to appear as something of a side-issue for the EEF, and there was also the general problem of the division of interest between marine and inland engineering districts. The SEF may well have looked for support from marine districts, but there were limits to their influence within the engineering federation. These problems became manifest when the SEF's special committee met the Emergency Committee of the EEF in September 1904.[26] The engineers asked to be told, 'minutely', how the SEF intended to carry out its programme. Inglis replied that before the unions were approached 'they would make certain that as a Federation their Local Associations were united and determined to carry the matter through even to the extent of withstanding a strike'. It quickly became clear that there was little enthusiasm on the EEF side for withstanding a Boilermakers' strike. At the end, the engineers agreed to report back to their Executive, while the SEF undertook to take no further steps until a reply to the request for joint action had been received. A reply from the EEF was not in fact received until August 1905, when the request to know how shipbuilders intended to implement their programme was repeated.[27] In effect the answer was 'no', and there the matter rested.

Following the decision of its special committee in January 1904, the

SEF Executive had in effect made action on its programme conditional upon EEF support. Failure to secure that support was therefore the ostensible reason for inaction. Though it was not the whole story, this was a real reason, and as noted above the advisability of securing support from this quarter had been stressed at an early stage. In his recent work on union impact in the industry, Reid observed that the significant non-shipbuilding membership of the leading unions was a source of bargaining strength, enabling strike action within the industry to be financed at least in part by members remaining in employment outside it.[28] It is hardly surprising that in contemplating a confrontation with the extremely powerful Boilermakers' Society the SEF should seek to close every loophole. While admitting the reality of this reason, however, it does appear that the federation shifted position in making EEF support a condition for action. What can explain this shift?

Inglis's statement at the meeting with the EEF, quoted above, might be taken to imply that united support for the programme within the shipbuilding industry was not assured in 1904, and that there was accordingly a reluctance to proceed except under the most favourable conditions; hence the stress on EEF co-operation. The importance of regional differences was emphasised earlier in this paper, and there was no doubt that these influenced the level of support for the programme. On the Clyde it had been approved with an assurance of that association's 'hearty support'. By contrast, the Tyne association's approval had been given 'in principle', while the Wear Shipbuilders' Association (WSA) had approved the proposals 'as a basis for negotiation'. Least enthusiastic of all had been the response of the Tees and Hartlepool Shipbuilders' Association (THSA). Whilst this association had favoured an approach to the unions on a limited range of issues, it had been unable to contemplate action on the programme as a whole, regarding it as 'impossible to carry into effect'.[29] Spence, the chairman, apparently doubted whether its advocates on the Clyde were really in earnest.[30] Although the original initiative had come from the Tyne, it was the Clyde that had pushed matters forward, to an extent that had led Bone, the chairman of the Tyne association, to allege 'that the Clyde was seeking to rush the thing'.[31] Bearing these responses in mind, it would be possible to depict the situation as one in which a reluctant north-east had been dragged to the point of confrontation with craft unionism by a militant Clyde.

To the extent that there is truth in such a view, it would appear that the north-east's reluctance sprang from a keen sense of the likely union reaction to the programme. Its substance, the WSA had felt, could not be obtained from the unions 'without a united and prolonged struggle'. The THSA had doubted whether even this would suffice. Assuming every shipbuilder was prepared to face the prospect, this association had questioned whether the conditions could be implemented 'even after a prolonged strike'. Indeed, two items in the programme, the open shop and sectionalised or sub-divided work, had been regarded as 'impossible of attainment'.[32] Such a judgement went beyond a simple calculation of union capacity to resist in the short run. Calculation of that kind did enter into the shipbuilders' deliberations, and not only in the north-east. An employer on the Clyde had drawn attention to the current financial strength of the unions following 'a long period of full and remunerative employment'.[33] The inference was that it would be better to wait until union finances were weaker.[34] This opinion also of course found expression in the north-east, where Tyne employers had argued that the unions were currently 'too strong for us' and that 'the time had not yet come for pushing the matter forward'.[35] The 'time had not arrived' tendency was indeed fairly pervasive. As suggested, however, north-eastern reluctance sprang from more than short-run calculation or prevarication. By comparison with the Clyde, there was less inclination to regard the destruction of craft union power as a practicable or even desirable objective. One may discern a preference for dealing with unions, that was scarcely apparent in Scotland. Writing to Inglis in December 1902, G.B. Hunter, of the Tyne firm of Swan Hunter, had emphasised: 'We in the North of England however want to work by *agreement with the Trade Unions*. We think we can manage the men better by so doing'.[36]

That there was in the north-east reluctance and scepticism regarding the programme is hardly open to question. Why then did the region's local associations not oppose its adoption by the SEF? Part of the answer may lie in a tendency to regard the proposals as simply a basis for negotiation. The WSA clearly took this view. In this connection it is of interest that the militant faction of Clyde employers had criticised the programme for its detail, fearing that the major issues would be fudged in a compromise deal with labour. The dilemma here though, as one critic had noted, was that while the programme may have been 'too elaborate', 'too concise' a draft was likely to prove unacceptable to the English districts.[37] The latter consideration proved paramount, and the CSA endorsed a programme that was less sweeping in its assertion of management rights, and more generous in its gestures toward a continuing union role, than the militants would have wished. But the unity with the north-east so achieved was bound to be a fragile one, given widely diverging viewpoints respecting the scope for negotiation and compromise.

SEF endorsement of the programme clearly concealed important regional differences, but the industry's failure to act independently should not be seen in these terms alone. Variations in outlook, as noted earlier, were also associated with different product markets, and in turn, size of firm and capital intensity. Such differences could reinforce regional influences, but cut across them as well. The Tyne was perhaps the key. On the one hand it was locked into the institutional structures of north-eastern industrial relations. Yet, on the other, its mix of firms resembled the Clyde more closely than the Wear and Tees. Means and incentive to make radical changes were greatest for the larger, more capital intensive liner and warship builders: in Armstrongs, Palmers, Swan Hunter and Wigham Richardson the Tyne possessed a core of these larger enterprises with the potential to take the long view. Of the three north-eastern associations, the TSA came closest to offering full support to the programme. The Clyde's hope must have been that it would sway opinion in the remaining two. But the Tyne also had its share of the cargo vessel builders that predominated in the region as a whole. For firms of this type, operating in a highly volatile market, short run considerations were paramount. In the eyes of the chairmen of the TSA and WSA, respectively, the programme appeared 'ideal' and 'utopian' rather than feasible.[38] However, incentive for a major reappraisal of working conditions was by no means non-existent in this sphere. The loosening of craft controls might be seen as paving the way for greater standardisation in the production of cargo vessels, and more extensive deployment of modern machine tools. Respecting the former, it is of interest that the most militant supporter of the programme on the Tyne was the Northumberland Shipbuilding Co., a specialist builder of standard cargo vessels.[39] So far as machine tools were concerned, the pneumatic riveting tool that became available during this period appeared for a time to promise major savings in what was the most labour intensive operation in hull assembly. Major cargo vessel builders, such as Furness Withy and Gray & Co. of Hartlepool, installed pneumatic plant. Since the tool could be operated by semi-skilled labour it seemed to offer employers both incentive and opportunity to act to loosen the grip of the Boilermakers on hull assembly work.[40] When interest in the tool's potential was at its height, during 1902 and 1903, the possibility of its immediate and widespread deployment may have done something to fuse short and long perspectives within the industry. In the event, technical problems were revealed which largely restricted the tool's use to light internal and superstructural work.[41] Such work was of some consequence for liner builders, but for the general run of cargo vessel firms it was hardly sufficient to sustain interest in the tool's deployment. For such firms, therefore, an assault on craft controls had less immediate relevance.

Opinion on the Tyne had been finely balanced when the programme had first come up for discussion in November 1902, but in corresponding with Inglis at the end of that year Hunter had, with some reservations, struck an optimistic note regarding the programme's prospects.[42] At a joint meeting of all three north-eastern associations the feeling of the majority had been 'quite satisfactory' towards the programme. Respecting the Tyne specifically, he had assured Inglis:

> Don't let anybody assume that we in this District will not support you. Most of us are already prepared to do so and the others I believe will come into line.

How far opinion in the north-east generally had come 'into line' with the Clyde by 1904 must remain an open question. Developments with respect to machine tools, noted above, had not been encouraging. It is in fact likely that the programme had not gained the assured support that would have made independent action a possibility. One thing, however, is clear. The industry's irresolution was the outcome of a complex range of forces. Though differences of region and product market went far to determine variations in level of support, the attitude of individual firms could not be predicted from the interplay of these factors alone. There were differences of opinion even between firms operating in the same region and product market. On the Clyde D. & W. Henderson was a militant supporter of action while Alexander Stephen belonged to the 'time has not arrived' tendency; a difference hard to account for in terms of any set of objective characteristics, but comprehensible perhaps in terms of individual personalities and company traditions.[43] An important inference might be that there was real scope for choice.

III

In the preceding paragraphs, failure to proceed with the programme was considered in terms of the immediate influences operating upon the SEF. There remain, however, the broader questions of interpretation. These may be reduced to the three points introduced at the beginning of this paper. Did the episode represent a real opportunity to transform the structures of industrial relations and with them the long-run prospects of the industry, an opportunity that was missed? Alternatively, was the apparent element of choice illusory, with the negative outcome predetermined by the strength of entrenched institutional structures? Or, finally, should the failure to proceed be interpreted positively, as a 'correct' choice, based on a rational assessment of the industry's situation during the period?

The view that the years 1902–5 presented British employers generally with a most favourable opportunity to rid themselves of union influence was advanced some years ago by Clegg, Fox and Thompson.[44] In the judgement of these writers, the opportunity arose through a combination of trade depression with an exceptionally favourable legal environment following the Taff Vale decision of 1901. It is perhaps convenient for our analysis that the years selected as being of general significance correspond precisely with the initiative in shipbuilding described above. That shipbuilders were in fact well aware of their legal advantage, and anxious to cling on to it, would appear from the activities of the SEF. That body, along with the EEF, the Railway Companies Association, the Mining Association, and the Scottish Chamber of Manufacturing Industries, was much concerned during 1903 and 1904 to prevent the enactment of trade dispute legislation that would restore union immunities, and attempted to mobilise opinion to that end.[45] In the event, the return of boom conditions in 1906 coincided with the election of a government sympathetic to the labour interest, and the Trade Disputes Act of that year marked a decisive shift in the balance of legal advantage away from employers.[46] The emergence of the Labour Party in that same year may also have suggested to some that the legal settlement was likely to prove durable. It is, then, arguable that an opportunity existed between 1901 and 1906 that was not taken up. Events across the Atlantic, observed by both sides of British industry, appear to reinforce the point.[47] In these same years American employers in engineering, steel and other industries turned decisively against unions. In the Clegg, Fox and Thompson account, it is implied that failure to act in Britain was a matter of choice. The majority of organised employers 'preferred' to work with unions.[48] Whether this preference was a matter of national culture or rested on more pragmatic grounds is not perhaps made clear, though it is likely these writers would have regarded Hunter's remark, quoted earlier, as of particular significance. Hunter, it will be recalled, suggested north-eastern employers wanted to work by agreement with unions because they thought they could 'manage the men better by so doing'.

Notwithstanding the Hunter comment above, the record of shipbuilding during this period casts some doubt on the extent of employer preference for dealing with unions. Rather, the industry's programme might be cited as evidence of a perceived opportunity to diminish, if not destroy, union influence that it was proposed to seize. The problem here is that, in the end, the perceived opportunity was not in fact seized. One response is to introduce the second of the three points with which we opened this discussion. Contrary to the view of Clegg *et al.*, was the apparent element of choice illusory? British employers dealt with unions because they had, in effect, no choice. The comments of the doubters within the shipbuilding industry are of significance in this regard. The programme was characterised as 'ideal' and 'utopian', the risks it entailed were seen as disproportionate to any tangible benefits that might emerge, and there was scepticism as to whether it could be enforced even after a protracted struggle. In this mix, there were two essential elements. One was the assumption that the unions were too strong, not just for the moment, as some argued, but permanently. The other concerned the limitations of managerial structures themselves. In relation to the first, there may be an instructive contrast to be drawn with the United States. Haydu has argued that, in that country, changes in technology and market structure were rapid and, crucially, occurred before the consolidation of stable trade unionism.[29] Opportunity and incentive for employers to break with unions were, therefore, greater than in Britain; hence the open shop drives that developed following America's industrial relations crisis of 1900–1. Compared with Britain, unions were weaker and employers' dependence on skilled labour less. Easier to attack on the one hand, unions had less to offer on the other, being too weak to be useful allies in managing the workforce or in reducing competitive pressures. For Haydu, then, the divergence in employer strategies as between the two countries during this period arose from differences in the relative timing and pace of changes in technology, market structure and unionisation. Though he refers to employer 'choices', an implication of his argument is that in Britain the prior consolidation of unionism constrained choice. Regarding managerial structures, most sectors of British industry in the period were dominated by relatively small family firms, catering for highly differentiated product markets. In such a setting, managerial and supervisory structures were relatively undeveloped and, as noted earlier, employers relied heavily on craftsmen for the detailed organisation of production. These features were characteristic of much of the shipbuilding industry, but even in engineering, where conditions were more diverse and employers had the advantage of the conditions of management secured in 1898, there remained a reluctance to assume direct control over the production process. The advantage, as Zeitlin has shown, was exploited principally in the direction of work intensification and cost cutting rather than in a major shift to mass production and 'scientific' management, and the evidence suggests that it was along this path that shipbuilders also intended to move.[30] If constraints imposed by fragmented markets and industrial structure are regarded as 'given', an assumption that tends to underlie favourable general assessments of entrepreneurial performance, then it obviously follows that the possibility of choice as between direct or indirect control of the production process was more apparent than real. Not only were craft unions too strong, there were not, in any case, the managerial structures to replace them. In its complete form, therefore, the SEF's programme might indeed appear 'utopian'.

There may be much force in this interpretation, but it must be qualified by a circumstance that we have already encountered. Opinion on the programme varied widely across the industry, even as between firms operating in the same region and product market. This might be taken to indicate that there was, in fact, an element of choice. It is possible that not all constraints operating on the industry were 'given'; that, for example, some scope existed for greater standardisation and consequent changes in work organisation.[51] The inclusion in the programme of the proposal to sectionalise plating work suggests some interest in more direct control, even in face of the view that it was 'impossible of attainment'. In relation to the lifting of constraints, however, there were always, in addition to alleged impracticalities, the competing claims of the short-run. These had been manifest on the Clyde at the very outset of the programme's development. At one stage it appeared that the advent of pneumatic machine tools might do something to fuse short and long-run perspectives but, as we have shown, this proved not to be the case. Concern with what was 'practical', in the short-run, contributed much to the pervasive 'time has not arrived' tendency. The irony here was that, by 1906, the time had passed.

There remains the possibility that choice was exercised, and that inaction on the programme should be interpreted as a 'correct' choice. If this was indeed the case, it should be noted that it was a choice made by default, since it took the form of a failure to pursue a programme that had been endorsed by the industry's national organisation; an endorsement that was not revoked. Further doubt concerning this interpretation arises when it is set within the context of Lorenz and Wilkinson's assessment of the costs and benefits of union organisation in the industry, an assessment introduced at an early stage in our discussion.[52] There is no need to rehearse the negative side of that assessment, since the points contained in the programme bear witness to the employers' perception of it. What is lacking, however, is clear evidence that employers perceived the benefits that these authors suggested flowed from the presence of unions. These benefits concerned the unions' functions as training, employment and welfare agencies in a system of externalised employment relations. Through these functions, it is argued, unions bore part of the cost of ensuring the continuity of a skilled and highly specialised workforce. Given the available technology, and the extreme fluctuations in demand that were characteristic of the industry, this system gave British employers a competitive edge over foreign producers down to 1914. While this may, objectively, have been the case, it is, as indicated, much less evident that employers treated it as such. Though a detailed investigation of SEF policy down to 1914 is beyond the scope of this paper, it is clear that it was directed more toward the weakening of union organisation than toward its consolidation. In 1907, for example, when the Boilermakers' Society experienced a financial crisis, the federation seized the opportunity to impose a humiliating settlement upon that union under threat of a national lock-out.[53] Such a threat was wielded frequently in the period down to 1910, and in that year was actually carried into effect, with dire consequences for the finances of the same union.[54] The preparedness of the employers to exploit what was in fact the precarious financial position of the industry's principal craft union suggests slight regard for its beneficial functions; just as, in the sphere of training, the federation's record might suggest a higher regard for apprentices as a source of dilutee labour than as the skilled workforce of the future.[55]

Whatever the beneficial functions of the unions, therefore, there seems in practice to have been little acknowledgement of them. Only in so far as they were perceived as potential allies in the enforcement of labour discipline did they emerge in a positive light in the employers' calculations.[56] Of course much may have been unspoken, but it remains hard to interpret inaction on the programme in terms of a perception that the benefits of union organisation outweighed its costs. Nonetheless, one might still hold on to the idea of a 'correct' choice, arrived at on a slightly different basis. While costs loomed larger than benefits in the employers' perception, the former may not have been seen as being of sufficient consequence to warrant the dislocation that an attempt to implement the programme would involve. In terms of the argument advanced by Hilditch and Reid regarding union impact on labour productivity in the industry, such a view would have been well founded.[57] Though Britain's share of world output was reduced from late nineteenth century levels, and fears of foreign competition were genuine enough, throughout the period down to 1914 around 60 per cent of the world's tonnage continued to be launched from British yards.[58] The industry could apparently live with strong unions without losing its competitive edge. Even allowing the opportunity, where was the incentive to break their grip?

The incentive, in so far as it may be said to have existed at all, existed with respect to the long-run. Even here, however, Hilditch and Reid are doubtful. In addition to their own evidence, they point to the findings of a major inter-war survey of union restrictive practices.[59] In the case of shipbuilding, as in a number of other industries, the survey concluded that employers had not advanced 'much definite evidence of restriction'. It must be said that this conclusion is somewhat surprising, in view of the inability of shipbuilders in the 1930s to introduce their preferred scheme for the operation of the critical new electric welding process, or to secure greater general flexibility in the deployment of labour across trade boundaries, both of which issues are referred to in the survey.[60] If these matters were indeed held to be of little account, it hardly augured well for the industry's ability to adapt in the rapidly changing technical and demand conditions that followed World War II. The cost of craft restrictionism may be postponed in its significance, but it surely cannot be postponed indefinitely. In the end, though, the problem with this interpretation concerns less the 'correctness' of the choice than the circumstances in which it may be said to have been taken, namely, by default.

NOTES

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1. See discussion in B. Elbaum and W. Lazonick, 'An Institutional Perspective on British Decline', in B. Elbaum and W. Lazonick (eds.), *The Decline of the British Economy* (Oxford, 1986)
2. See N. Crafts, 'The Assessment. British Economic Growth over the Long Run', *Oxford Review of Economic Policy*, Vol.4 No.1 (1988). For the debate on the 1980s see especially, D. Metcalf, 'Water Notes Dry Up: The Impact of the Donovan Reform Proposals and Thatcherism at Work on Labour Productivity in British Manufacturing Industry', *British Journal of Industrial Relations*, Vol.XXVII No.1 (1989); P. Nolan 'Walking on Water? Performance and Industrial Relations under Thatcher', *Industrial Relations Journal*, Vol.20 No.2 (1989); and P. Nolan and P. Marginson, 'Skating on Thin Ice? David Metcalf on Trade Unions and Productivity', *British Journal of Industrial Relations*, Vol.28 No.2 (1990).
3. P J. Hilditch and A.J. Reid, 'Trade Unions and Labour Productivity: The British Shipbuilding Industry, 1870–1950', Department of Applied Economics Working Paper No.8907, University of Cambridge (1989). A general study emphasising, in the American context, a positive relationship between unionism and productivity is R.B Freeman and J.L. Medoff, *What Do Unions Do*? (New York, 1984).
4. E Lorenz and F. Wilkinson, 'The Shipbuilding Industry, 1880–1965', in B. Elbaum and W. Lazonick (eds.), *The Decline of the British Economy* (Oxford, 1986), p.127. See also E. Lorenz, *Economic Decline in Britain: The Shipbuilding Industry, 1890–1970* (Oxford, 1991).
5. Lorenz and Wilkinson, 'The Shipbuilding Industry', pp 114–16.
6. For a general discussion of externalised and internalised patterns of labour relations see H Gospel, 'Comparative Patterns of Labor-Management Relations: Great Britain, the US, and Japan', *Business and Economic History*, 2nd series, Vol.15 (1986), pp.119–31.
7. See J. Lovell, 'Collective Bargaining and the Emergence of National Employer Organisation in the British Shipbuilding Industry', *International Review of Social History*, Vol.XXXVI No.1 (1991), pp.59–91
8. A. Reid, 'Employers' Strategies and Craft Production· The British Shipbuilding Industry 1870–1950', in S. Tolliday and J Zeitlin (eds), *The Power to Manage?*

Employers and Industrial Relations in Comparative-historical Perspective (1991), pp.39–40.

9. Ibid., p.40. See also J. Zeitlin, 'From Labour History to the History of Industrial Relations', *Economic History Review*, 2nd series, Vol.XL No.2 (1987), pp.175–6.
10. Shipbuilders and Repairers National Association (SRNA). Archives at the National Maritime Museum, Minutes of National Federation of Shipbuilders and Engineers, 8 and 30 Oct. 1891.
11. Later published in book form; E.A. Pratt, *Trade Unionism and British Industry* (1904).
12. Tyne and Wear Archives, Tyne Shipbuilders' Association (TSA) papers, Minutes, 14 Feb. and 24 April 1902.
13. Lovell, 'Emergence of National Employer Organisation', pp.77–84.
14. Strathclyde Regional Archives, Clyde Shipbuilders' Association (CSA) papers, Minutes, 14 Aug. 1902.
15. Ibid., Case Papers, TD 241/12/1.
16. Ibid.
17. Ibid., letter from Charles Scott, 9 Sept. 1902; Minutes, 24 April 1902.
18. Ibid., Minutes, 17 Oct. 1902. In this the influence of Thomas Biggart and Allan Smith, permanent officials of both the CSA and EEF, might be detected.
19. Ibid., Case Papers, TD 241/12/1; SRNA Archives, Shipbuilding Employers' Federation (SEF) Minutes, 13 Aug. 1903.
20. TSA papers, Minutes, 13 Nov. 1902.
21. SRNA Archives, SEF Minutes, 13 Aug. 1903.
22. Ibid., 2 Oct. 1903 and 20 Jan. 1904.
23. The East of Scotland Association. CSA, Case Papers, T D 241/12/1; Minutes, 17 Oct. 1902.
24. SRNA Archives, SEF Minutes, 20 Jan, 1904; Circulars, CL248, 1904.
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29. Responses of the various associations are contained in CSA, Case Papers, TD 241/12/1. Also CSA, Minutes, 4 Dec. 1902 and TSA, Minutes, 21 Nov. 1902.
30. CSA, Case Papers, TD 241/12/1. Reported in a letter from G.B. Hunter to Dr Inglis, 24 Dec. 1902.
31. TSA papers, Minutes, 21 Nov. 1902.
32. CSA, Case Papers, TD 241/12/1.
33. Ibid.
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39 TSA papers, Minutes, 21 Nov. 1902. Regarding standard vessels see J.R. Parkinson, *The Economics of Shipbuilding in the United Kingdom* (Cambridge, 1960), pp.28 and 147.

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52. Lorenz and Wilkinson, 'Shipbuilding Industry', pp.114–16.
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55. The use of apprentice labour as a means of evading craft controls is noted by Lorenz in his thesis; E.H. Lorenz, 'The Labour Process and Industrial Relations in the British and French Shipbuilding Industries from 1880 to 1970' (Ph.D. thesis, Cambridge University, 1983), pp.60–8.
56. An approach made manifest in the national disputes procedures that emerged in a number of industries during this period. For the shipbuilding case see Lovell, 'Emergence of National Employer Organisation', pp.77–91.
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Colliery Managers and Nationalisation: The Experience in South Wales

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Colliery managers have been largely ignored by historians. Despite the existence of an extensive industrial relations literature on British coalmining, there is a dearth of research into the industry's professional occupational groups in general, and into the implications of public ownership for colliery managers in particular. This article seeks to redress this imbalance. The impact of nationalisation on colliery managers is assessed in the context of terms and conditions of employment, managerial trade unionism, attitudes towards nationalisation and its effect on managerial authority.

Colliery managers, dismissed as hand-in-glove with, if not identical to, the coalowners, have been relatively neglected by historians. Their general image was so bad that Emmanuel Shinwell, the Minister of Fuel and Power, described them as knowing as much about social affairs 'as a pig does about pianos'.[1] Accordingly, managers' opposition to public ownership is taken for granted. Francis and Smith, talking about surprise and disbelief among many South Wales miners after nationalisation, contend, '[i]t soon became evident that the necessary break had not happened and that there were quite clear elements of continuity, particularly in management, policy and personnel'.[2]

When the coal industry was nationalised in January 1947 the National Coal Board (NCB) took over 980 collieries, and it can be assumed that the number of colliery managers was slightly smaller taking into account that some managers were in charge of more than one of the smaller mines. Under the Coal Mines Act of 1911 (CMA), '[e]very mine shall be under one manager, who shall be responsible for the control, management, and direction of the mine'.[3] Hence, a colliery manager can be defined as the most senior technician in charge of all operations in the mine and personally responsible for safety. Undermanagers, whose duties consisted primarily of supervision of underground workings, could be seen as *deputising* for the colliery manager, but not relieving him of his personal responsibilities under the CMA.

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Despite the existence of an extensive industrial relations literature on British coalmining,[4] there is a dearth of research into the industry's professional occupational groups in general and into the implications of public ownership for colliery managers in particular. 'Industrial relations literature frequently considers managers to be simply agents of the employer' but it is important to remember that 'managers are employees and their role in industrial relations cannot be assumed to reflect only their position as representatives of the employer'.[5] A similar under-representation of the professions in business history was highlighted recently by Matthews.[6] The purpose of this article is to go some way towards redressing this imbalance by examining the impact of nationalisation on colliery management in South Wales.

A typical assessment of the managers' response to nationalisation maintains that they:

> find it difficult to adjust themselves to the change from private to national ownership. They view with growing fear the increasing power of the union and this, coupled with their unclear role in the new hierarchy, makes them hesitant in taking decisive actions in their own collieries.[7]

Statements of this kind are rarely substantiated. The possibility of managers benefiting from nationalisation is never considered; nor does the literature question whether managers were satisfied with their conditions under the old regime. This is simply taken for granted – a very questionable assumption, particularly in the case of managers working for larger companies or more junior personnel.

This article is divided into four sections. The first assesses colliery managers' terms and conditions of employment in South Wales prior to nationalisation along with changes in conditions after 1947. Secondly, the emergence of managers' professional associations as pressure groups is traced and the role of the managerial trade union established after nationalisation is discussed. The third section explores managers' attitudes towards public ownership and its effect on how collieries were managed. Finally, a frequent charge levied by the critics of nationalisation, namely, that it undermined managerial authority, is considered.

I

The level of colliery managers' satisfaction with their terms and conditions of employment before nationalisation has never been analysed. While a degree of loyalty to the coalowners is to be expected, it is important to stress that all colliery managers were employees. A rare example of managers openly criticising their terms and conditions of employment occurred in the 1943 National Association of Colliery Managers (NACM) South Wales branch presidential address. After voicing his concern about the lack of suitable recruits for management training, the president maintained that the principal reason for this lack of candidates was the unattractive status of managers.[8] This issue was discussed in a meeting with the owners' representatives in 1941. The latter accepted the managers' explanation as to the shortage of recruits but were offended that the managers mentioned these criticisms in a memorandum on the training of colliery officials which was being prepared for public investigation. Yet, in a subsequent meeting of the Monmouthshire & South Wales Coal Owners' Association (MSWCA) it was acknowledged that:

> There could be no doubt that the colliery managers had submitted the true state of affairs and they had suggested that one of the reasons for this dearth of recruits was that those in official positions were not being adequately remunerated.[9]

Colliery managers' principal grievances were discussed in three meetings with the owners' representatives during the Second World War. The managers cited extreme examples of the unsatisfactory level of salaries for certain managers, such as the case of 'a Colliery Manager, at a Colliery where 150 men were employed, [who] was paid £5. 5. 0. [£5.25] a week, which is less than a fireman's wages'.[10] John Fox describes the position of junior personnel's salaries:

> Prior to nationalisation ... the Ocean Coal Company undermanagers decided to form a union ... Now, I had been informed by the general manager of the Ocean Coal Company ... 'I want you to keep this quiet, you are one of the best paid undermanagers in the Ocean, but don't tell a soul.' So the chap beautifully kept it quiet. We put our cards on the table. We were all getting paid £6 a week. ... That dispensed with that, it was a little bit on the low side.[11]

The managers demanded a salary increase and recognised minimum salaries for small and large collieries which had been outlined in a circular issued by the MSWCA in January 1920. This circular recommended a minimum salary of £400 per annum for managers with less than 100 men under their charge, and £500 per annum for managers with more than 100 men under their charge.[12] The owners' representatives promised to consider this request and, at a later meeting of the Coalowners' Association, the chairman stated, 'that it was considered that the Association must take some steps to remove this feeling of grievance on the part of colliery managers'. It was, therefore, resolved to adopt the minimum salaries demanded by the colliery managers.[13]

In relation to superannuation, the managers' representative maintained:

> This question is still a very sore point with those Colliery Managers who come under no superannuation scheme. ... I think I am right in saying that practically 70% of the Colliery Managers in this District have now a Superannuation Scheme. But ... we want ... to solicit your further assistance so that we can get other Colliery Companies who are not at present operating the Scheme to operate it.[14]

In the next meeting in 1942 the managers were 'glad to report some progress ... but there are still some substantial Colliery Companies that have not yet seen their way clear to adopt any scheme'. One of the largest of these was the Amalgamated Anthracite Co.[15]

The lack of contractual security of tenure provided a further grievance:

> I may say our Association has been very alarmed during recent years at the treatment meted out to certain Colliery Managers who have had many years of experience and have given many years of service to their employers, and who have been dismissed at a moment's notice without any compensation for loss of office.... Since the beginning of this year one Colliery Manager with 25 years experience, another with 15 years experience, another with 12 years experience, and another with 2 years experience, have been given notice.[16]

Viv Lewis, who had been employed by Powell Duffryn, explains:

> if there were no [results] sooner or later you would lose your job.... The least thing you did wrong – out. So if you had a staff job you always had to give some thought to the fact that any day you'd be out as well and in those days you couldn't get a job anywhere else, you see ... [for managers] there weren't discontent but a lot of fear. Fear that they'd lose their job.[17]

The owners' representative's response on this issue was merely to state that:

> the powers of this Association ... are limited ... and it is perfectly clear that from the point of view of powers we have none to deal

> with questions of that kind. ... Colliery Companies and individual Owners would regard any interference on our part in regard to matters of this sort as a very marked trespass upon their own prerogatives.[18]

Finally, the absence of any formal arrangements for compensation in case of accident or industrial disease were lamented. Colliery managers were not considered to be workmen under the Workmen's Compensation Act.[19] In a meeting in 1945 the managers express their anxiety in case of contraction of silicosis or pneumoconiosis, which:

> arises from the appreciation of our position in comparison with that of workmen and Junior Officials. Whereas a workman or Junior Official who becomes a victim has at least some security of legal protection in the form of compensation, our members have no security whatsoever. An *ex gratia* consideration at the hands of our employers cannot be regarded as a security; it is more a charity than anything else.

They proceeded to cite three cases of managers who were given unsatisfactory *ex gratia* payments after they had been certified as suffering from either disease.[20] In relation to accidents the owners' representatives promised to give fullest consideration to the matter with the intention of establishing some form of insurance scheme.[21]

This evidence suggests that colliery managers' position under private ownership was relatively unfavourable since terms and conditions of employment were governed by personal favour rather than professional right. After nationalisation matters improved considerably, since the NCB was obliged under the terms of the Coal Industry Nationalisation Act to secure the safety, health and welfare of its employees, including managerial grades.[22] Terms and conditions of employment for managers improved, with the exception of perks which were reduced in some cases. In relation to the grievances discussed above progress was achieved. However, in some instances managers had to wait for a few years until new agreements were concluded.

Recommended minimum salaries for colliery managers in South Wales in 1944 stood at £480 per annum for collieries employing less than 100 men, and £600 per annum for collieries employing more than 100 men.[23] Perks were not included in these figures and actual salaries may have been higher than these minima. After nationalisation managers' salaries were negotiated nationally. In 1947 a single salary range with a minimum of £650 a year and a maximum of £1,500 a year for all collieries, irrespective of size, was laid down. Salaries remained frozen until 1951 when they were increased to £800 a year as the minimum for a small colliery and £1,650 as the maximum for a large colliery. Subsequently, they increased steadily every two years.[24]

On the subject of perks, however, managers lost out to some extent. Customary perks before nationalisation were rent-free accommodation, free coal and electricity, a gardener and gifts such as Christmas bonuses. The long-term policy of the NCB of incorporating the value of perks into salaries, to put an end to variations in real earnings based on local custom prior to nationalisation, led to widespread resentment since pay was taxable whereas perks were not. Although 'recompense for the loss of minor perquisites ... by a single lump sum based on the value of the perquisites and the length of time the recipient held the post carrying the perquisite'[25] was provided, the issue became a major grievance of colliery managers after nationalisation. The dispute over the continuation of concessionary coal for managerial grades was taken to arbitration and finally settled in the managers' favour in February 1950.[26]

A significant change in the nature of perks was mentioned by Philip Weekes:

> [nationalisation] formalised them and instead of having a sort of general understanding in conversation with my managing director, I now had a written formal contract which was better really, so on the whole conditions about pay and service were better.[27]

Even though the level and range of perks may have been reduced, they were no longer granted as a personal favour, which could be withdrawn at any time or used to put managers under pressure, but given as a right – as part of the total remuneration commensurate with the professional position.

Superannuation became a universal provision for managers, compared with roughly 70 per cent of managers in South Wales being in a scheme at the end of the Second World War. Worries about lack of security of tenure under private ownership were alleviated after nationalisation following the introduction of employment contracts. Thus, public ownership was to transform colliery managers' terms and conditions of employment considerably.

II

Prior to nationalisation, managers rarely got involved in the political debates and industrial contests in the industry. Only during the world wars did managers attempt to assert themselves collectively, and it was essentially a consequence of public ownership that this was not a short-lived episode after the Second World War as it had been after the First World War. Then attempts by colliery managers to exert some collective pressure on the owners had ceased soon after the end of the war, roughly coinciding with the termination of government control.[28]

During the Second World War managers increasingly spoke out for themselves through their professional organisation, the NACM, which had previously restricted its activities to the exchange of technical information. The managers' dilemma was that they lacked both a suitable mouthpiece (since the terms of reference of the NACM were restricted by a Royal Charter prohibiting it from engaging in trade union activities) and generally what can be called professional or industrial clout. This lack of industrial strength was a result of small numbers, relative isolation and divisions within the managerial grades into various professional organisations, with only one or a small number of each grade based in any particular colliery. Moreover, membership of these organisations was not compulsory. Membership of the NACM in South Wales stood at about 70 per cent of those eligible to join during the Second World War.[29] The escalating pressure for output, extension of government control and preparations for nationalisation, gradually drew colliery managers into the debate.

Immediately after the Second World War the NACM acted as a *de facto* trade union and was recognised by the Labour Government as 'the body dealing with salaries and conditions of employment of all their members'.[30] Andrew Bryan, NACM national president in 1946, in his presidential address in June, outlined a draft charter for management dealing with managerial prerogatives as well as terms and conditions of employment. This charter can be understood as management's demands on the NCB comparable to the miners' charter drawn up by the National Union of Mineworkers (NUM).[31]

Nevertheless, in the long run the organisational framework of this association and its limitations on membership made it inappropriate as the representative body of all managerial grades in the nationalised coal industry. In response to the turbulence in the industry between 1945 and 1947, a number of organisations catering for managerial and professional grades voiced their concern about the future and called for the establishment of a representative body on trade union lines. A letter to the *Colliery Guardian* published in August 1945 stated that, 'many colliery officials are seriously concerned regarding their position and prospects under the new regime'. Steps needed to be taken in order that questions relating to status, salaries and pensions 'are not settled without agreement of the persons concerned'. The author further suggested that the various professional organisations should set up a joint committee to discuss questions of common interest.[32] In reply, mining surveyors endorsed these suggestions. They further pointed out that according to its bye-laws and regulations, the Institution of Mining Surveyors was not permitted to discuss and negotiate conditions and that there was therefore, a 'need for a national negotiating body to represent their interests under the changed conditions'.[33] In 1947 the NACM, the National Association of Colliery Under-Managers, the Institute of Mining Surveyors, and the Association of Electrical and Mechanical Engineers (Mining) 'co-operated to form the first registered trade union established to cater for the needs of those engaged in the management and administration of the coal industry and its ancillary undertakings'.[34]

The British Association of Colliery Management (BACM) was, in the words of its first president, Major Walton-Brown, in his address to the first delegate conference, 'formed as an outcome of nationalisation'.[35] The Nationalisation Act required the NCB to negotiate with associations representative of various grades of employees, including management, about terms and conditions of employment.

Branches of the union were organised corresponding to the NCB divisions, with the option to form sub-branches. The objects of the association were:

> To organise, unite, protect, represent, and act in the interests of, persons engaged in, or who have previously been engaged in, professional, technical, managerial or staff duties in the Mining Industry of Great Britain.... To provide benefits for members ... [and] To regulate the relations between members and their employers, and between members and members, and between members and other employees in the Mining Industry.[36]

BACM's original aims included those of opposing 'any attempt in any quarter to victimise members' and opposing strenuously 'the abolition of perquisites which have been enjoyed by custom under private ownership'.[37]

BACM membership increased steadily from 4,355 in 1947 to 11,018 in 1953 and 15,731 in 1959.[38] This growth was partly due to affiliations and amalgamations. BACOS, a Yorkshire based management trade union which was never recognised by the NCB, merged with BACM in July 1947,[39] and the National Association of Colliery Under-Managers was disbanded 'as the BACM is ready to take over its functions'.[40] The union eventually managed to establish demarcation rights. Broadly speaking, it negotiated for everybody above overmen, which normally meant under-managers, up to divisional board level.[41]

Despite its early recognition by the NCB, it took a considerable amount of time before a conciliation agreement was concluded. Not until July 1948 was this agreement finalised and agreement reached on salaries for colliery undermanagers and certain other supervisory grades.[42] This substantial delay, and the associated wages freeze, led to some grumbling among the membership. These feelings were expressed by the national president, Walton-Brown, at the second annual conference in April 1948:

> I think the time has come for me to speak out ... there has never been a time when the management and staff were so disgruntled ... so ready to talk of the possibility of having to take industrial action as at the present time.... Let me give one or two examples ... for 6 months BACM has been endeavouring to set up a full and complete scheme for negotiation and conciliation at national and divisional levels. Month after month the matter has been delayed, promises have repeatedly been broken.[43]

During later BACM conferences similar pronouncements abounded, together with criticism of the NCB administration and management's role in the administrative hierarchy. These utterances should not necessarily be interpreted as profound disaffection with the new employer, but may well be understood as conventional trade union behaviour. Indeed, disaffection was never sufficient to lead BACM to authorise industrial action. Criticism of the way an industry was run was nothing exceptional for a trade union – the NUM did exactly the same, only the arguments used differed significantly.

BACM, like other managerial and professional trade unions was suffering from the dilemma of a potential, and often real, conflict between professional ethic and trade unionism among its membership:

> Conflicts of loyalty exist for all employees, but for managers they assume a much greater importance. Managers have traditionally put the interests of the industrial organisation in which they work above those of any external organisation.[44]

Hence, BACM's industrial strength was rather limited. Primarily, moral pressure provided the bargaining power in negotiations with the NCB. The board, well aware of BACM's dilemma, exploited it to the full, as was illustrated by Bullock, BACM president from 1956 until 1969:

> It was sufficient for me to even mention a salary claim and an economic blizzard would sweep, not only through the corridors of Hobart House [the NCB headquarters] ... they would have us believe any increase given to management would start off a string of

> claims from the workmen, that it would ruin the industry, ruin the export market, upset the balance of payments and even the pound itself might be shaken.[45]

III

In the discussion of colliery managers' attitudes towards nationalisation, collective views, expressed through bodies such as the NACM, and individual opinions are distinguished. Collectively, colliery managers were impartial in the debates about the ownership of the industry. The emphasis was on professionalism and political neutrality; managers were prepared to co-operate under any form of ownership. An element of pragmatism contributed to this position since most managers had little choice but to co-operate, because their skills and qualifications were not easily transferable to any other industry.

During the first nationalisation debate at the end of the First World War, the president of the South Wales Branch of the NACM, commenting on the Sankey Report in March 1919, maintained that:

> there was bound to be a change in the future carrying on of the industry, and it was the duty of the Colliery Manager's Association to be prepared for that change ... and to do their level best for success of the industry in the future.[46]

When the debate about the long-term future and ownership of the industry was revived during the Second World War, the managers again adopted a neutral stance. The NACM national president in June 1945 stated in reference to nationalisation that:

> I would say at once that the colliery manager will serve his country faithfully under national ownership – if this be his fate – as he will also if it be decreed that colliery ownership shall take some other form, like or unlike that of today.[47]

After the election of the Labour government and following the passage of the Nationalisation Act, colliery managers expressed their willingness and desire to co-operate with the new regime.[48] The other professional organisations in the industry gave similar assurances. The Institute of Mining Engineers 'desired to assist by every means in their power the reorganisation of the industry under national ownership' and the executive of the National Association of Colliery Under-Managers unanimously agreed to co-operate 'during the transition to public ownership'.[49]

Dissatisfaction with nationalisation was limited. There is no evidence of managers leaving the industry after nationalisation. There was no shortage of managerial personnel during this period, whereas the shortage of manual labour is often discussed and contributed considerably to the national coal shortage at this time.

The managers interviewed on the whole welcomed nationalisation:[50] Philip Weekes greeted nationalisation:

> The pits were run down and I felt that Government backing ... would make a big difference. I thought that nationalisation would help industrial relations ... but mostly I felt that we could stop the run down of the industry if we had Government investment and Government assistance in marketing.[51]

Correspondingly, Viv Lewis:

> could see the need for nationalisation ... prior to nationalisation, I can honestly tell you, there was a total lack of planning, there was forever a fight against wages, a total lack of capital for modernisation, inefficiency caused by lack of material and coal transport systems and even ventilation – they were all affected ... [Cutting wages] meant ... the only means of reducing costs, instead of paying attention to efficiency.[52]

Furthermore, nationalisation had a range of beneficial consequences for managers' work. Philip Weekes appreciated the provision of material on all aspects of the job published by the NCB and felt that:

> there was a greater interchange about information ... between one colliery group and another ... Before nationalisation when I wanted to see ... a new piece of machinery ... in another company, ... I wrote to the agent, Powell Duffryn agent, ... and he said, 'No, it's not company policy for people from other companies to see that'. So, ... I dressed up as a Bevin Boy, I was still a young man, ... because the Bevin Boys who were new to the industry were allowed into that colliery.... I didn't have to worry about that after nationalisation.[53]

Moreover:

> when I became manager of Wyllie in 1946, I didn't know whether I was making a profit or a loss ... they didn't want people to know detailed costs because their competitors would get it.... So, there was a great resistance, even with the manager having costs.... It wasn't until after nationalisation ... that I really had a profit and

> loss account.... A tremendous improvement because it began to make you more cost conscious.[54]

With regard to colliery profit and loss accounts, the South Western Divisional Coal Board decided in October 1947 that it was:

> preferable for the necessary information to be conveyed to Colliery Managers by higher officials who would use their discretion as to the amount of detailed information which could best be conveyed to the Colliery Manager.[55]

By 1950 it had become the practice to circulate 'Profit and Loss Accounts to Colliery Managers ... [merely excluding] from these Accounts the amount of Surplus Export Proceeds credited to the separate Collieries'.[56]

Nevertheless, nationalisation was not a flawless success story for colliery managers. Dissatisfaction focused on aspects of the structural setup of the nationalised industry in general and certain NCB policies in particular. The most widespread criticism centred on complaints about too much bureaucracy, red tape and paper work, as well as anonymity within the organisation. In the words of John Fox:

> There was too much bureaucracy that had crept in with nationalisation.... And while the system itself was good, I think there was far too much overlapping of jobs in those days.... All too often these people at the top didn't know the manager, I don't think half of them visited the pits at all, they would be remote in their little castles, and they didn't know what was going on.[57]

However, any assessment of this issue should bear in mind that, 'when the NCB took over the coal industry it was, in terms of numbers employed, the largest single industrial undertaking in the non-communist world'.[58]

In addition to this dislike of bureaucracy certain aspects of NCB policy were also criticised. Emrys Williams, who spent most of his working life in the geologically difficult anthracite area, thought that many attempts at planning and standardisation failed:

> The intent was good, but in my opinion there was too much waste in developing these places ... they had this money to spend.... To overspend was a credit, to underspend was a crime ... [so everybody] just wasted it.... They were over-sophisticated.

Attempts at introducing working methods pioneered in the East Midlands failed because in:

> parts of South Wales machines worked ideally but in other places you couldn't, so you had to evolve some other scheme, if you were

> going to mechanise at all.... People standardised mining operations to a national level ... but as every mining engineer knows ... one section of a pit can vary from another section in the same pit.[59]

IV

A frequent criticism of nationalisation states that managers' authority was being undermined and that their status was whittled away as a consequence of the transfer of the industry to public ownership. This argument falls into two parts; on the one hand, problems in disciplining the men and the loss of traditional sanctions in this respect were lamented and there was a demand for their restoration. On the other, managers' authority and decision-making power was seen to be undermined by the newly created bureaucracy after nationalisation, namely by technical experts who appeared in the collieries in unprecedented numbers and through a whole host of new superiors in the administrative hierarchy. One commentator contends that:

> the highly centralised structure of the industry ... has caused dissatisfaction ... among mine managers. They declare that the limitation on their authority resulting from the new structure of the industry is a leading cause of inefficiency and labour unrest.... There is no question ... that nationalisation has greatly reduced the mine manager's power in one very significant respect. He no longer has the same capacity as before to grant or withhold favours. Under private ownership he was able to wield great power in the community.[60]

Bullock mentions the following grievances after nationalisation:

> We had lost a lot of our authority. We had lost none of our responsibility. We were governed from afar by people we didn't even know.[61]

Similarly, Walton-Brown in his 1949 BACM presidential address, deplored the fact that 'very little has been done to improve or even maintain the prestige of the colliery manager since the vesting date'.[62] This line of criticism, broadened to include the administrative organisation of the NCB, often within the context of a more general debate about centralisation and decentralisation, was one of the most widespread attacks on the NCB in particular and the principle of nationalisation in general.[63]

Prior to nationalisation, 'most colliery agents and colliery managers had worked for firms small enough for them to have direct access to the boards of directors who were the ultimate decision-makers'. Nevertheless,

> The enormous size of the nationalised industry made a much longer line of management necessary, and the problems of rapid communication and decision making along it had not all been solved. But most of the practical questions of management of collieries and colliery groups were settled without having to be referred up and up through the hierarchy.[64]

Assuming that colliery managers' authority did decline, it is arguable how far this was due to nationalisation rather than to other factors such as changes in the labour market, technological innovation and structural change within the industry. Was the decline in managerial authority genuinely a consequence of the centralised structure of the nationalised industry and its bureaucracy, as was argued by the critics of nationalisation? Or was it in fact caused by quite separate trends which could be observed before nationalisation and would have intensified whether the industry had been nationalised or not, especially bearing in mind that some form of centralising restructuring was considered to be inevitable even by the coalowners?

An Acton Society Trust survey, published in 1951, analyses the extent of managerial authority after nationalisation at colliery, area and divisional level in some detail. The authors conclude:

> There are many stories of dissatisfaction concerning the Colliery Manager, and it is said that this is because he has been robbed of his powers under nationalisation. The reality seems to be a little more complicated. Under private ownership the Colliery Manager did not have any considerable powers in such matters as capital development or sales matters. He was responsible for the smooth running of the pit, including the hiring, firing and promotion of men, but in all wider matters he was under the instruction of the Agent. This position remains virtually unchanged today.[65]

Still, his role had changed, on the one hand, with the advent of technical experts and, on the other, with the gradual decline of his power as the uncrowned king in the village. In South Wales, this position had largely disappeared by the later 1930s, when the South Wales Miners' Federation assumed the role of undisputed leader in the mining communities.

Managerial authority was obviously affected by changes in labour relations. It became increasingly difficult to enforce discipline during the Second World War and after nationalisation compared with the years after 1926. According to the imaginary colliery manager in Benney's wartime coalfield chronicle, before the war '[t]he industry always had a quarter of a million men on its books for whom it couldn't find work: men with no other use than to help us managers enforce discipline and keep down wages'.[66] The crucial change in this respect was not nationalisation itself. Rather, it was the radical transformation of the labour market in the industry, concurrent with the emergence of a far more powerful trade union, which can be traced back to the Second World War.[67] This labour shortage was to continue until the late 1950s. Management no longer had many of the traditional means of enforcing discipline at their disposal. Whether the industry had been nationalised or not, this reversal in the fortunes of labour could not have been ignored and management by fear was bound to have to change into management by consent.

Problems with indiscipline challenging managerial authority, where they occurred, were not directly or even primarily due to nationalisation. Labour problems were spread unevenly between coalfields, areas and individual collieries, and persisted largely in traditional centres of unrest. The causes of poor industrial relations in the industry have to be sought in deeper historical roots and cannot be attributed to changes in the structural organisation of the industry.[68]

The second point of this argument concerns the impact of nationalisation on colliery managers' role in the hierarchy of decision-making. The hierarchy certainly changed, but whether this affected a manager's role to the degree of undermining his authority depended very much on where he stood in the hierarchy. It needs to be emphasised that in matters of general policy 'the agent is the link between the colliery and the higher levels of management. The manager is almost completely absorbed in running his colliery'.[69] Many complaints referring to a loss of authority seem to imply that managers had a completely free hand in managing their collieries before nationalisation. This was not the case in reality.

The evidence suggests that managers were already losing authority before nationalisation, especially during the Second World War. Benney's colliery manager laments that:

> large companies, with several pits, were appointing 'agents', either to superintend various technical aspects of their business, or to co-ordinate the day-to-day working of sub-groups of collieries. Under this system the manager of the mine, while retaining his responsibilities under law, was tending in fact to lose real power and status.[70]

After the outbreak of war government interference in and later control of the industry led to further changes.

This transformation of colliery managers' role was not entirely due to the war and government control either, although it was accelerated by this experience. Rather, it was a manifestation of a much longer-term trend which was to intensify around the middle of the twentieth century. This trend, namely technological change in mining methods, the rise of large collieries and a tendency towards amalgamation and concentration resulting in larger colliery companies, was to a degree independent both of war and nationalisation. Sir Andrew Bryan wrote in 1951 that with the vast change of technological development in coal mining in the last 60 years and the trend towards bigger and deeper collieries along with amalgamations, the position laid down in the Coal Mines Act of 1911, that 'every mine shall be under one manager who shall be responsible for the control, management and direction of the mine' which had 'never applied in the full and absolute sense ... has gradually been weakened, and with nationalisation the divergence between the law and practice is becoming greater still'. Bryan further mentioned that already the 1938 Royal Commission on Safety in Coal Mines had reported on this dilemma of the manager, namely that he carried the responsibility but was subject to orders from above.[71] This dilemma was largely due to outmoded mining legislation. When the CMA was passed in 1911, undertakings were significantly smaller and mining technology was less sophisticated. By the middle of the twentieth century it had become impossible, in the case of the larger mechanised mines, for one man to be expert in all fields and to manage and oversee personally all operations in and about the colliery, from the coal face to the washery. Notwithstanding this, the colliery manager still carried the overall personal responsibility.

Perceptive in this respect was the 1956 presidential address to the South Wales branch of the NACM:

> We hear from time to time that the colliery manager is frustrated and not allowed to manage his own pit. Is this strictly true? I cannot entirely subscribe to it ... is it not a fact that mining techniques have changed so much and so rapidly that we have failed to adjust ourselves to the new circumstances in which we find ourselves? Are we not attempting to do too much individually? In the past, the manager had to make most decisions himself with very little assistance ... today, with the high standard of organisation required in the pit with increased mechanisation and personnel management and many other things brought into the manager's duties, he had to delegate some of the work to others, a thing which many were reluctant to do. Again, when they failed from time to time to achieve their objectives and suggestions were made in an attempt to help them, they often misinterpreted these as interference. They

> should realise that they could no longer manage their pits without considerable help from others.[72]

Generational differences probably contributed to this grievance. The most senior managers under private enterprise, especially colliery agents or men who worked for small companies where their personal influence might have played a significant role may have possessed a fair amount of authority. Conversely, the managers interviewed experienced little difference in this respect. Philip Weekes:

> saw no change, bearing in mind I was only manager for about seven months under private enterprise although I had been an official before.... But I don't think there was a dramatic change. It is a popular belief, and you hear it in many quarters now but I don't think it was anything very great. The old managing directors and general managers of companies had had very tight control on cash and everything else. The only difference was that it was very easy to pick up the telephone, I suppose, and talk to them direct.[73]

In the middle of the twentieth century the industry experienced a host of structural and economic changes impinging on colliery managers freedom of action and authority. They were under pressure from below, due to the labour shortage and newly acquired strength of the NUM, and from above due to organisational changes as a consequence of nationalisation as well as long-term changes in mining methods. In short, in many ways their traditional role and function had come under stress and adjustments were required. This transformation in managerial authority originated before nationalisation and subsequently intensified partly independently of public ownership. Nationalisation was concerned essentially with managerial organisation above the colliery level. Even without nationalisation there would have been some form of reorganisation of the industry after the war, possibly on the lines of the Foot Plan championed by the coalowners.[74] In this respect nationalisation implied primarily magnification of an existing and inevitable trend – towards mechanisation, larger collieries and larger colliery undertakings.

V

The picture of colliery managers which emerges in the above discussion differs considerably from the image of managers as the *bête noire* of industrial relations mythology. Their relations with the coalowners, far from being characterised by a flawless unity and identity of interests, were, if not continually under strain, more complex than might be expected. Managers appear as professionals trying to assert themselves and to establish a place for themselves in the ideologically highly charged theatre of industrial relations in the coal industry.

Colliery managers collectively and individually, if they did not welcome nationalisation, were at least prepared to co-operate with the new order. There is no evidence of deep-rooted disaffection with the new regime such as a large-scale exodus from the industry or attempts by management to undermine nationalisation.

Managers gained in their terms and conditions of employment after nationalisation. Nationalisation did not signify the arrival of the millenium either for mineworkers or colliery managers but it rendered a considerable improvement compared with the old regime. It offered new opportunities, not the least being the establishment of a management trade union. This provided managers for the first time with an institutional body through which they could express their grievances without fear and take up their position in the consultation and conciliation machinery of the industry.

The various strains and stresses which managers found themselves subject to after nationalisation, such as a certain decline in authority, were in some measure independent of nationalisation and would have had to have been accepted and accommodated whether the industry had become publicly owned or remained in private hands. However, it is most unlikely that managers' grievances could have been voiced as openly and bargained over as was possible under the NCB.

NOTES

I am grateful to Edmund Newell for his comments on an earlier draft of this paper.

1. *Colliery Guardian*, 8 March 1946, p.325.
2. H. Francis and D. Smith, *The Fed: A History of the South Wales Miners in the Twentieth Century* (1980), pp.436–7.
3. Coal Mines Act, 1911, 1 & 2 Geo. 5 c.50, S.2(1)
4. W. Ashworth, *The History of the British Coal Industry, Vol.5: 1946–1982: The Nationalized Industry* (Oxford, 1986); G.B. Baldwin, *Beyond Nationalization: The Labor Problems of British Coal* (Cambridge, MA, 1955); B.J. McCormick, *Industrial Relations in the Coal Industry* (1979); R. Page Arnot, *The Miners One Union, One Industry: A History of the National Union of Mineworkers, 1939–1946* (1979); and B. Supple, *The History of the British Coal Industry, Vol.4: 1913–1946: The Political Economy of Decline* (Oxford, 1987).
5. A. J. Arthurs, 'Managerial Unionism in the Coal, Steel and Electricity Supply Industries' (unpublished M.A. thesis, University of Warwick, 1975), p.1.
6. D. Matthews, 'British Business History: A Review of the Periodical Literature for 1989', *Business History*, Vol.XXXIII No.2 (1991), p 192
7. S.K. Saxena, *Nationalization and Industrial Conflict: The Example of British Coal Mining* (The Hague, 1955), p.185.

8. *Colliery Guardian*, 9 April 1943, p.445.
9. National Library of Wales (hereafter NLW), Papers of the Monmouthshire & South Wales Coal Owners' Association (MSWCA), MG 22, Minute Books, 13 Oct. 1941.
10. NLW, MV 612, Minutes of a Meeting between MSWCA and South Wales Branch, NACM, 29 Sept. 1941, pp.3–4.
11. J. Fox, Interview, p.11. John Fox, born 1911, colliery manager from the mid-1940s until his retirement in 1964, is one of five colliery managers interviewed as part of a larger oral history project. For a detailed discussion of this project which involves 39 interviews of mineworkers, colliery underofficials and managers along with oral evidence in general see I.M. Zweiniger-Bargielowska, 'Industrial Relationships and Nationalisation in the South Wales Coalmining Industry' (unpublished Ph.D. thesis, University of Cambridge, 1990), Appendix I, pp.465–95.
12. NLW, MV 612, 29 Sept. 1941, p.4.
13. NLW, MG 22, Minute Books, 13 Oct. 1941. These salaries were raised by the owners to £480 and £600 p.a. respectively in 1944; ibid., 17 Jan. 1944.
14. NLW, MV 612, 29 Sept. 1941, p.5.
15. NLW, MV 614, Minutes of a Meeting between MSWCA and South Wales Branch, NACM, 11 May 1942, pp.5, 14.
16. NLW, MV 612, 29 Sept. 1941, pp.5–6.
17. V. Lewis, Interview, pp.5–6. Viv Lewis was born in 1907, became undermanager in 1944 and had been promoted to deputy area production manager by the time of his retirement in 1969.
18. NLW, MV 612, 29 Sept. 1941, p.11.
19. Ibid., p.6.
20. NLW, MV 624, Minutes of a Meeting between MSWCA and South Wales Branch, NACM, 18 June 1945, pp.2–5.
21. NLW, MV 612, 29 Sept. 1941, pp.11–12.
22. Coal Industry Nationalisation Act, 1946, 9 & 10 Geo. 6 c.59.
23. NLW, MG 22, Minute Books, 17 Jan. 1944.
24. B.J. McCormick, 'Managerial Unionism in the Coal Industry', *British Journal of Sociology*, new series, Vol.XI No.4 (1960), Table 2, p.365. A small colliery here is defined as one where the output is less than 300 tons of coal and/or other saleable minerals per day. One problem for colliery managers was that the wages freeze after 1947 resulted in a narrowing of differentials with the NUM, a trend which was reversed from 1951 onwards.
25. Ibid., p.362.
26. *Colliery Guardian*, 9 Feb. 1950, p.178. See also PRO, COAL 6/153, Minutes of South Western Divisional Coal Board, 14 Feb. 1950.
27. P. Weekes, Interview, p.7. Philip Weekes, born in 1920, became undermanager in 1946 and ended his working life as director of the South Wales coalfield and part-time member of the NCB. He retired in 1985.
28. See NLW, MV 612, 29 Sept. 1941, pp.9–10.
29. NLW, MV 614, 11 May 1942, p.5.
30. *Colliery Guardian*, 7 Sept. 1945, p.289.
31. Page Arnot, *The Miners*, pp.125–6.
32. *Colliery Guardian*, 31 Aug. 1945, p.259.
33. Ibid., 14 Sept. 1945, p.328.
34. J. Bullock, *Them and Us* (1972), p.147.
35. *Colliery Guardian*, 11 July 1947, p.58.
36. BACM Head Office, Nottingham, BACM, *Rules*, 1947.
37. Arthurs, 'Managerial Unionism', p.18.
38. McCormick, 'Managerial Unionism', Table 1, p.360.
39. *Colliery Guardian*, 25 July 1947, p.116.
40. Ibid., 24 March 1949, p.390.
41. McCormick, 'Managerial Unionism', pp.359–61.
42. *Colliery Guardian*, 16 July 1948, p.84; 23 July 1948, p.118.

43. Ibid., 16 April 1948, p.543.
44. Arthurs, 'Managerial Unionism', p.32. See also McCormick, 'Managerial Unionism', pp.366–7.
45. Bullock, *Them and Us*, pp.183–4.
46. *Minutes of Proceedings of NACM*, Vol.XVI (1918–19), p.386.
47. *Minutes of Proceedings of NACM*, Vol.XLIII (1946), p.2. Note that this speech was made before the 1945 General Election result had been declared. Since it is generally accepted that the Labour victory was unexpected, this statement cannot be interpreted as mere opportunism in the knowledge of impending nationalisation.
48. *Minutes of Proceedings of NACM*, Vol.XLIV (1947), p.12.
49. *Colliery Guardian*, 12 Oct. 1945, p.461.
50. Emrys Williams was the only exception. He thought that nationalisation was a disadvantage to the industry: 'the political element was so strong ... you had to employ men whether you had work for them or not ... over-employed ... too many people doing too little work ... the safety measures ... there was nothing as far as nationalisation did, that private enterprise hadn't done ... it was over-investment ... over-sophistication'., Interview, pp.9, 19. Emrys Williams, born in 1908, was undermanager and colliery manager from 1945 until his retirement in 1964.
51. P. Weekes, Interview, pp.5–6.
52. V. Lewis, Interview, pp.4–5.
53. P. Weekes, Interview, pp.15–16.
54. P. Weekes, Interview, pp.19–20.
55. PRO, COAL 6/151, Minutes of South Western Divisional Coal Board, 14 Oct. 1947.
56. Ibid., 20 June 1950.
57. J. Fox, Interview, pp.5–6.
58. Ashworth, *History of the British Coal Industry*, p.31.
59. E. Williams, Interview, p.10.
60. S.D. Spero, *Labor Relations in British Nationalised Industry* (New York, 1955), pp.31–2.
61. Bullock, *Them and Us*, p.141.
62. *Colliery Guardian*, 21 April 1949, p.514.
63. See Ashworth, *History of the British Coal Industry*, pp.181–89, 193–97.
64. Ibid., p.182.
65. Acton Society Trust, *Nationalised Industry, No.7, The Extent of Centralization*, Part II (1951), p.25.
66. M. Benney, *Charity Main: A Coalfield Chronicle* (1946), p.71.
67. Arguably, nationalisation itself was a consequence of this shift in the balance of forces, namely reorganisation of the industry along the lines desired by the NUM rather than the scheme favoured by the coalowners.
68. See Baldwin, *Beyond Nationalisation*; R. Church *et al.*, 'Towards a History of British Miners' Militancy', *Society for the Study of Labour History*, Vol.LIV No.1 (1989); K.G.J.C. Knowles, *Strikes: A Study in Industrial Conflict* (Oxford, 1952); G.V. Rimlinger, 'International Differences in the Strike Propensity of Coal Miners: Experience in Four Countries', *Industrial and Labor Relations Review*, Vol.XII No.3 (1959); W.H. Scott *et al.*, *Coal and Conflict: A Study of Industrial Relations at Collieries* (Liverpool, 1963); and Zweiniger-Bargielowska, thesis.
69. J.F. Scott and R.P. Lynton, *Three Studies in Management* (1952), p.26.
70. Benney, *Charity Main*, p.66.
71. Sir Andrew Bryan, 'Sixty Years of Colliery Management', *Minutes of Proceedings of NACM*, Vol.XLIX (1952), pp.80–1.
72. *Minutes of Proceedings of NACM*, Vol.LIV (1956–57), p.190.
73. P. Weekes, Interview, p.15
74. Supple, *History of the British Coal Industry*, pp.622–4.

An Early Academic Enterprise: A Study of Technology Transfer

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A case study of a pioneering enterprise founded in 1934 by a Cambridge scientist is used to explore the distinctive strengths and weaknesses of technology-based companies with academic origins. The case exemplifies the importance of a knowledge network for technology transfer and of collective effort by a professional team. The need for a close relationship with a major company is identified. Small innovative enterprises are vulnerable to takeover by a larger corporation, which provide needed resources at the price of a reduction in innovative capacity. Technology based ventures of this kind contribute to and are shaped by processes of technology transfer.

This paper explores the experience of a small academic enterprise which achieved a remarkable series of product and process innovations over a 15-year period. In a number of respects the case is typical of small innovative companies which have grown up around Cambridge and other universities since the 1970s. In one respect, however, the company is unique: Aero Research was set up in 1934 by Norman de Bruyne at a time when no other firms were being founded locally by Cambridge scientists.[1] Thus it predates by 40 years the companies which unknowingly followed its lead. The points in common with more recent companies are therefore of particular interest. The case is used to explore the question of what makes a small technology-based firm distinctive, marking it off from other types of firm. The case also enables us to open up more general questions. What problems are encountered in setting up an innovative company *ex nihilo*? How do its founders draw to it the resources the company requires to become self-sustaining? What difficulties do its members encounter in maintaining it in an indifferent or hostile environment? Why do its founders allow it to be bought up within a dozen years by a foreign corporation? Although each case is unique, there are also issues of general interest arising from such a critical instance of innovation in an initially unpromising setting. The interest is both practical and of wider significance.

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I begin by briefly telling the story of Aero Research: the unfolding of events as they appeared to the founder, Norman de Bruyne, and to his colleagues, who were generous in providing evidence. Quotations are from our recorded discussion and from de Bruyne's unpublished memoirs. The evidence is relatively copious; I present material selectively where it bears directly on the themes of enterprise and innovation.[2]

The paper draws on a case study from some 60 years ago to address an issue which is currently a source of interest in contemporary studies of the new enterprise culture; the source of strength and weakness of high technology ventures and what makes these companies distinctive. The difficulties of defining a typical new technology-based firm are often pointed out, but in the small firm literature and in small firm policy the distinctive features of high technology companies are not always recognised. In identifying these distinctive characteristics we also see how the strengths and limitations of high technology ventures are interrelated. Although there are now a number of surveys available listing features of high technology firms and industry this information is supplied out of context.[3] Detailed qualitative study is required to explore the combination of characteristics of the high technology firm; contextual evidence and analysis are required to show the processes of technology transfer effected by such firms. The interest of a historical case of this kind is that salient features of a high technology company emerge with some clarity from the otherwise unfamiliar setting of the past and the similarities with features of contemporary companies are thereby highlighted. There are certain patterns in activities of this kind, though each case is unique.[4] Technology-based ventures of this kind contribute to and are shaped by processes of technology transfer.

I

Aero Research Ltd.

Aero Research began life as the Cambridge Aeroplane Construction Co., founded in 1931. The idea came to its founder, Norman de Bruyne, then working at Cambridge University, as a result of his enthusiasm for flying and his conviction that the latest scientific knowledge could productively be applied to the design and construction of aircraft. His father was a Dutchman who bought and managed extensive estates in Chile and travelled annually to Britain where his family was educated. After receiving a first class degree in Natural Sciences and a prize fellowship at Trinity College, de Bruyne obtained his doctorate under Rutherford in the Cavendish Laboratory in 1930. He resisted pressure to repeat work earlier carried out in an American laboratory for Rutherford and preferred to pursue his own research interests: 'I was never one of Rutherford's boys.' He left the Cavendish Lab in 1930. In his recollections of the Cavendish Laboratory he cites Blackett: 'If physics laboratories have to be run dictatorially ... I would rather be my own dictator.'[5] Trinity College came to his rescue. Unexpectedly he was offered the post of Junior Bursar at the College; this provided him with a stipend which enabled him to continue his research, mainly in materials science. The job was a demanding one, involving considerable responsibility for the assets of the richest of the Cambridge colleges as well as the practical problems of rebuilding and running an institution (albeit an unusual one: part club, part student hostel, part museum), which was to stand him in good stead when he set up a business of his own. He had few regrets for a conventional academic career; he felt he was now free to pursue his interest in aeronautics in his own way. 'I'll never forget the first time I flew. It was a new world. There was a man painting a cottage as I walked to the airfield. On the way back he was still on the ladder and I wanted to pull him off and shout: "Don't you know we can fly now?" '

The academic world of the 1930s continued on its way as de Bruyne set about creating a company which would apply the latest technology to aircraft construction. He could not accept whatever aircraft came his way; he had to improve their design and construction. 'It is difficult to recall how conservative most British aircraft structures were in that period. Thick wings were thought to have a large drag. Cantilever wings were thought to be too heavy or even too risky. Anything but a biplane was regarded as un-English and not really practical.' De Bruyne designed two successful prototypes using novel design and materials; the first one, 'The Snark', notable for its smooth thick wings and light fuselage, had its first flight in 1934. Flying over the Channel in his own craft, the coasts of England and France spread out beneath him, inspired him to further effort. His next model, 'The Ladybird', was intended as a light, low-cost aircraft. However he soon realised that his original plan was not realisable. There were large numbers of small aircraft companies competing for a market limited by the depression and the capital required to move to higher volume, lower cost production was far beyond him. The chances of further capital seemed limited: 'We did go round the City of London, but the merchant banks were not in the least interested.'

However de Bruyne was sustained by his conviction that there was a market for expertise which could be applied to research and development of many aspects of aircraft design and construction. He was flexible enough to adapt his initial plans and to move to consultancy and specialist R & D activity on a commissioned basis. Aero Research Ltd. was registered in Duxford, just outside Cambridge, in 1934. His first objective was to make the company known. 'I decided deliberately not to publish in a high-brow journal; the popular technical press seemed the best place for my bait.' Through a number of articles in the *Aeroplane* he succeeded beyond all his hopes in attracting the attention and custom of the de Havilland company. In 1935 he was engaged as a consultant to this, the leading aircraft company in the country. This event seemed at the time momentous: 'It was not just the £1000 to present to my restive bank manager. Now we were being taken seriously.' The company had become a viable undertaking with a recognised identity in the world beyond. From the members of de Havilland he received encouragement and support as well as a regular earnings which enabled him to experiment with new products and processes. His friendship with C.C. Walker at de Havilland, in particular, proved a valued source of support.

Though commissioned research and development work was interesting and provided basic revenue, 'living on our wits' via consultancy fees did not appear to provide long term prospects and de Bruyne switched his efforts to search out a profitable product which would enable him to fund his own research and development work. Realism required that he turn from the design and construction of entire aircraft to the more modest but nevertheless demanding requirements of reinforced materials and adhesives. The first successful product of the new firm, Gordon Aerolite, was described in the Royal Aircraft Establishment report in 1937 as 'the most promising organic sheet material yet produced for stressed skin covering for aircraft'. The endorsement of de Havilland and further articles by de Bruyne in the technical press reporting their development work enabled the Air Ministry to pluck up courage, as it appeared to de Bruyne, and offer Aero Research a contract for research work on composite materials in 1938.

This funding alleviated financial anxieties for the first time. Until then de Bruyne's salary from bursarial work and academic teaching had, together with consultancy fees from de Havilland provided the only source of revenue. Developments in composite materials gave rise to further research contracts, including work on tail planes and later a Spitfire test fuselage. However this material could not be relied on as a source of business and de Bruyne was constantly engaged in finding new products and processes. Over the next ten years in addition to the composite material for use in aircraft construction (Gordon Aerolite), his team developed a new adhesive, Aerolite, a strip heating process which was eventually widely used in laminate wood production, an adhesive capable of adhering to metal (redux), and a composite material based on a honeycomb construction which proved much lighter than other materials used in aircraft production, among other innovations. Each represented a technological breakthrough which later proved to have important commercial applications, achieved with a staff of under a dozen and the use of consultants mainly from the university.

His choice of adhesives as an area of work on which the company could be based was made almost as soon as he gave up his initial plan for an aircraft construction company. Synthetic adhesives, and in particular urea-formaldehyde, appeared to him to be a promising area for commercial development. He hoped it would prove possible to pursue potentially profitable work which would not overwhelm their limited resources, and which could provide the revenue to enable them to continue R & D in aircraft design and construction. Milk-based glues of the period had severe shortcomings, revealed when aircraft were subject to stress and repair. He had experience of the reek of sour milk in the fuselage, and clouds of mould spores were released when pieces of plywood were pulled off. The plywood itself was reported to be held together with blood, according to Ciba Geigy documents. Early attempts in Germany had produced a urea formaldehyde glue with considerable adhesive strength but this had the shortcoming of cracking. His contacts at Cambridge were extensive and, without committing himself to paying a long term professional salary, he was able to take on a chemist, Dr R. E. D. Clark, as a consultant. Clark developed samples of UF glue for evaluation at Aero Research, samples which provided the basis for experimental work and very small batch production of a UF glue which they called 'Aerolite'. Eventually, using formic acid as a catalyst, another member of Aero Research, Claude Rayner, found a way to prevent the cracking characteristic of the earlier German adhesives. After early attempts at producing glue in buckets, the question soon arose as to whether to go on trying to produce 'in-house' or to sub-contract:

> in our innocence we approached ICI who made UF moulding powders. We asked for a quotation and had several discussions and they gave a verbal undertaking not to compete with us. However, at the Royal Aeronautical Society annual reception on 27 Jan 1938 they exhibited samples of UF glue and hardener as their own.

ICI, however, claimed that de Bruyne was working for it as a consultant and that his claims to intellectual property in UF glues were unjustified; and moreover that ICI had been working in this area before de Bruyne approached it.[6] De Bruyne also objected to the prices ICI charged his firm, which made it uneconomic for him to obtain supplies on this basis, but ICI defended its volume discount differential pricing. Had de Bruyne been ordering in bulk he would have been offered a better price.

Another set of ideas appeared vulnerable to de Bruyne when ICI threatened to contest de Bruyne's patent for a honeycomb construction, litigation which he did not believe he could afford. ICI has no record of this interaction.[7] It seems likely that potential funders were deterred by the fact that de Bruyne was in competition with ICI in the production of adhesives and only the founder's private resources and a bank loan secured by his house were available to fund development work.

In 1937 de Bruyne persuaded his former school fellow from Lancing College, Robert Lea, to join Aero Research and take charge of the commercial side of the undertaking, a collaboration which continued until Lea's retirement, interrupted only by his wartime service in the air force. Lea had no direct experience of running a company but worked well with de Bruyne. Lea's main activity in the early years was to attempt to generate a consumer market for the new adhesive. His first target was the furniture industry, but here he made slow progress.

> The idea of people coming to the inventor's door is absurd. They all rejected it, despite the inadequacies of existing glues, except for one cabinet maker who was a real entrepreneur. The very idea of something new alarmed most of them.

The new glues eventually entered the furniture market, but progress was slow in this area, and the company did not benefit from its intellectual property in this market for lack of adequate patenting. De Havilland, however, could see the urgency of replacing the casein glues which were unable to meet its aeronautical requirements, and de Bruyne's company continued to depend on contracts for research from this source.

By 1938 the staff had grown from four to ten. Robert Lea who had given up secure employment at Lloyd's Insurance to join de Bruyne recalled that period over 50 years later:

> Aero Research was great fun. Nobody had fears or paused to think 'I may be unemployed tomorrow.' There was so much excitement to carry us along. When we opened the morning's post an order for £50 made us cheer. Even the humblest or dullest person felt he mattered. They felt themselves near to someone with extraordinary intellect and energy. Norman could be sensationally rude and awkward if he was dealing with bankers who annoyed him. But he was never impatient or discouraging to people in the works. He was always interested in what they were doing. He loved teaching and he could explain anything clearly. He trained a series of youngsters to be really knowledgeable technicians.

George Newell and Claude Rayner were the most dedicated and successful of de Bruyne's early technical staff.

In the early days of the company de Bruyne combined the junior bursarship at Trinity College with lecturing and teaching in the Engineering Laboratory at the University, driving to Hatfield for consultancy on a weekly basis for de Havilland. He did not know of another scientist who attempted to start a small company in this way at that time.

> People thought I was a bit mad. Everyone advised against it. And I certainly did not receive any encouragement from my bank manager. In the end I got what I could out of him but I had to put up my house for security.

However, the discouragement was not universal. J.J. Thomson (1856 – 1940) who preceded Rutherford as head of the Cavendish Laboratory and was Master of Trinity College when de Bruyne obtained a prize fellowship there in 1928, did not despise de Bruyne's entrepreneurial efforts; he showed an interest in Aero Research from the start. Lawrence Bragg who was later head of the Cavendish Lab was also encouraging.

To begin with, de Bruyne admitted to the typical don's arrogance in assuming that:

> any fool could run a business ... to start with I kept the books myself. A professional accountant told me he had never seen such a ghastly set of books. But as it was all my own money I couldn't care less.

Over the years, de Bruyne learned that enterprise called for intellectual muscle of its own kind. He continued his academic activities for ten years before finally resigning from Trinity: 'I realised then that I could not go back to the university. The excitement of the real world was too much.'

It was five years before their work on glues became profitable, partly through the work of Don Hubbard, and by then politics had intervened to change the world. The early days at Aero Research were interrupted by the cataclysm of the war which in many ways makes the company's history non-comparable to that of any subsequent academic ventures. Many contemporary firms are highly dependent on Ministry of Defence contracts. Under wartime conditions the Air Ministry wanted to make Aero Research the base for a government plastics research laboratory. The prospect of being a government scientist appealed so little to de Bruyne that he preferred to lose his Air Ministry contract and the equipment it had provided. De Havilland had cancelled his contract under pressure of wartime requirements and the prospects for the firm's survival looked poor. As a last resort, Aero Research undertook aircraft repair as its main source of revenue while de Bruyne and the small remaining team continued their R & D activities as best they could. Profits from glue production, which rose after 1942, were creamed away by the Excess Profits tax, designed to prevent war profiteering; this fell heavily on a small firm which had not been profitable before the war. As the war drew to an end there was considerable anxiety about the future of the company.

A move which had not seemed particularly significant at the time in fact proved decisive. De Bruyne had taken out a licence to produce melamine formaldehide on the basis of a process patented in Britain by a German company. With his eye for promising innovations, he had identified a major new material. This patent had become available under wartime conditions, but Ciba had claim to it under peacetime conditions. In the course of negotiations with the Swiss company, the latter developed an interest in this small British company which appeared to provide a basis for developing the British plastics market. De Bruyne knew he lacked the resources to move in this direction on his own and future prospects for the company appeared bleak. The war had brought an end to the association with de Havilland and work for the Air Ministry had proved endlessly frustrating. The scale of and scope for the new plastics industry was brought home to de Bruyne when he was sent to assess plant in Germany at the close of the war. He saw the need for massive capital investment, but his attempts to raise funds continued, in his view, to be plagued by the presence of ICI. The Swiss interest in Aero Research in 1947 could not therefore be ignored. It offered what appeared to be very favourable conditions of purchase (though he later felt he sold his company 'much too cheap'). De Bruyne had fought to avoid the sale of his company during the difficult period of the war and he now found it

> heartbreaking to give up 100% ownership, but in the circumstances the offer could not be turned down ... I had a sense of freedom and joy at the loss of this awful worry.

In the early days relations with the Swiss were excellent. De Bruyne became a friend of the head of Ciba, Dr Robert Käppeli, of whom he had a high opinion and who always respected de Bruyne's intellectual and entrepreneurial talents. The Swiss were also prepared to pour funds into a completely new factory complex.

> We took a complete plan for the new factory to Basle. Käppeli said: 'What about the profits?' We had never thought about them, but told him: 'We are working on that.' We had to work right through the night to produce the expected profits for the next day.

The plans were accepted and new production plants were underway by 1949; thereafter expansion was based not only on adhesives and plastics, but on de Bruyne's work on composite materials, all on a scale which would have been unthinkable on the basis of the resources of Aero Research Ltd. alone.

The financial controls and management systems introduced by the Swiss were not to begin with oppressive, especially in view of the expansion which they facilitated and the control which they continued to allow de Bruyne and his team. The relationship with Basle was 'federal rather than feudal'. Ciba had a majority shareholding in Aero Research which retained its individuality under its own board of directors. New work on Araldite epoxy resins and reinforced plastics was a source of interest. Customers from home and abroad were invited to a Summer School held in Duxford and at Cambridge in 1951 to introduce them to new developments in the field. De Bruyne thrived on consultancy and diffusion of new knowledge, but there was not enough scope for this type of activity for him in his role as managing director. A new formalin plant was started up in 1953. By 1956 there were 394 employees and a turnover of approaching £2 million. However, de Bruyne was restive; ten years after the acquisition his time was largely taken up with administration in his role as managing director. Ciba had internationally a turnover of over £65 million in 1956, so that the Duxford plant was small beer in its worldwide operation. De Bruyne was frustrated by Ciba's inactivity in selling his products in the USA; he had no control over the organisation of sales there and could do nothing as it seemed to prevent the loss of the potentially huge US market for aircraft products. De Bruyne recalls that 'increasing pressure was put on me to attend meetings with the managing directors of other Ciba factories in England, which were time consuming, unproductive and unreal because our respective industries were in such different fields'. De Bruyne's distaste for lengthy board meetings only increased over time. Robert Lea recalls an occasion when an important bid for resources was being mounted from Duxford; in the course of lengthy negotiations de Bruyne played no part. When challenged after the meeting he admitted cheerfully to having switched his hearing-aid to Radio Luxembourg. Although he could be infinitely patient in following up the details of new product development, de Bruyne's patience with administration and negotiation was not sufficient to keep him any longer at Ciba and he resigned in 1959.

There is a tendency for founders to depart on or soon after the sale of their enterprise in most recent acquisitions of academic ventures. De Bruyne remained in the corporate environment for a relatively long period. But his objections to the new regime were similar to those of many subsequently bought-out founders: the corporate culture and and in some respects the national culture of the parent company were alien and eventually unacceptable. The Swiss managers at Ciba seemed to him to have such an eye for detail that the wood could be lost for the trees. De Bruyne preferred to map out new terrain. Again de Bruyne set a lead later followed by other academic entrepreneurs by founding a new venture, Techne Ltd., a scientific instruments company which was designed to benefit from the resources and experience obtained in the course of the growth of Aero Research and its experience within Ciba. He became an active publicist for free enterprise and opponent of policies he regarded as obstacles to enterprise at a time when his ideas were unfashionable. He had no patience with the industrial policy, taxation and planning of the Labour government of the period. He became infuriated to the point where he decided to emigrate to the USA in 1967 and set up a branch of Techne in Princeton, New Jersey. He returned to Britain almost annually, remaining in control of developments at Techne, Duxford, where he was still actively involved at the age of 85.

II

The story deserves a fuller telling. Here, however, I am concerned to identify parallels between the experience of Aero Research and academic enterprise among innovative companies 50 years later. We can identify among the features of Aero Research's story several which are common to a pattern discernible among recent Cambridge technology-based ventures.[8] In what follows reference to contemporary academic enterprise is based on a study underway of about 50 such firms mainly around Cambridge.[9] My aims are exploratory, shaped by a broader inquiry into motives and understandings of participants in processes of technological innovation.

The story of Aero Research illustrates one way in which a viable though vulnerable enterprise was sustained over a difficult period. I will discuss briefly how the experience of this company illustrates the motivation of a successful founder and opens up the issue of what is required to set up a small high technology company and ensure its survival. I will go on to reflect on aspects of the process of technological innovation which the case reveals and summarise the distinctive strengths and limitation s of high technology enterprise in conclusion.

De Bruyne's pattern of university activity combined with industrial application of research through the founding of a company appeared to be unique in the 1930s, but it became common among academic founders of high technology companies around Cambridge from the 1970s. There are many recent cases of commercial enterprise by able scientists or technologists whose academic career is affected by lack of posts in their specialty or because their temperament or circumstances make them averse to meeting the demands and making the compromises required by academic patronage. For those experiencing blocked mobility in the university world, a career in corporate industry or government, where the demands for conformity appear to be even greater, may have even less appeal. They are usually motivated by commitment to a project which interests them intellectually and for which they see exciting practical applications if they are prepared to act as champion. Initially the prospect of financial reward tends not to be a primary consideration.[10] Many contemporary high technology entrepreneurs have had a period abroad or are from a foreign family, a characteristic which give them some perspective on British practices. However they form part of the British network of expertise; here again de Bruyne led the way.

Sources of motivation are diverse, but all academic entrepreneurs have a 'founding idea' or vision of doing or making something new for which founding a company is necessary and, if they succeed at all, the capacity to convince others of the viability of this project. Indeed if one were seeking the single most important characteristic of a successful founder of a high technology venture, it would appear to be the capacity to project and share their vision of the future with those needed to bring it about. Founders must convince potential co-workers who are indispensable to the realisation of the plan. They must persuade potential funders and customers or find ways of overcoming the shortage of capital. In order to get the technology to the point where the project can be realised they need to draw on a substantial knowledge base and to be members of a network of expertise. If they are to succeed in the longer term they must be facilitators who sustain and encourage the contributions of other members of the team. Successful entrepreneurs in a knowledge-based enterprise can seldom undertake a solo activity; it is in the nature of the activity that it requires considerable dependence on the expertise of others. Here there is a contrast with more traditional industries or artisan activities where although the contribution of other members is essential to success, only the founder is irreplaceable. In a high technology venture, expertise is highly specific and in the early days the knowledge of members of the firm is unique and irreplaceable; firm-specific skills are further developed through the members' experience. Thus an effective working team is the hallmark of the initial innovative success. This calls for an unusual combination of characteristics in the founders: the ability to identify and draw in technical ability among others, leadership which is facilitative rather than dominating, fixity of purpose together with adaptability to circumstance.

De Bruyne had the capacity to share and project his vision of the future, using the specialist press, a medium he already knew, although he turned deliberately to the technical rather than the academic press. This vision changed as he adapted to what he learned in his new environment. His original commitment was to aircraft design and construction, but as he learned more he could see that the development of intermediate aircraft products provided a better chance of survival. It proved necessary to produce a stream of innovative products, a requirement which makes heavy demands on a small team. De Bruyne was rewarded for his capacity to encourage and enthuse by a remarkable level of effort and commitment from his staff in the early days. He showed a capacity to select staff of considerable ability, even where they lacked formal training, and to encourage their efforts at innovative development of new products and processes. He also delegated management activities for which he recognised that he had little aptitude, though not to an experienced manager. Robert Lea, whom de Bruyne described as having 'devoted his life to me in a way' describes himself as initially an amateur manager, though a dedicated one. Lea was rewarded with shares after the purchase of Aero Research by Ciba and was made managing director of Techne in which he had part ownership. Otherwise de Bruyne provided rather little in the way of shares or other financial incentives. Though he saw himself as the leader of an exceptional group working at Aero Research, de Bruyne also insisted that 'the editor's word is final' and there was no contesting decisions to which he was committed. Despite the merits of firm leadership, this pattern of ownership and control often contributes to the lack of sustained independent expansion of the founder's enterprise. Having invested so much time and energy in in the unfamiliar acitivity of setting up the company and working for its early growth, the technical entrepreneur is often reluctant to hand over control to experienced professional managers. The founder's experience, capital and contacts are limited and insofar as these remain the base for the firm, expansion is subject to these constraints.[11]

Venturing on new ground, de Bruyne succeeded in establishing a viable enterprise firstly by forming a close connection with a major customer, in this case de Havilland. This converted project into reality; to be believed in by those with influence was required if the company was to become real by gaining access to resources. A link of this kind with a larger and more secure organisation, whether this be a funder, production partner or customer is often a condition not only of identity but of survival for the small venture. Thus 40 years on members of Acorn

Computers depended for their markets on their connection with the BBC.[12]

Personal links characterise successful relationships between small companies and the outside organisations with which they have to interact, largely because the credibility on which access to resources depends is based on personal trust and professional respect. The capacity of the founders to persuade others, and especially potential collaborators and customers, of the feasibility of their vision depends initially on personal contact but it also requires a capacity to project a credible version of the future to others beyond a personal network. Access to a knowledge base and a network of academic and industrial contacts is required to bring about this project. De Bruyne drew on published information and contacts from all over the world, in particular keeping himself informed of developments in Germany. The importance of such scanning activities is shown in this case by the influence of the German patent for melamine and the specialist journals from which de Bruyne derived and by means of which he diffused his knowledge. The use of technical knowledge for commercial purposes requires personal interaction, but also recourse to recorded information like patents and publications from which further expertise can be derived. The institutions which maintain these forms of expertise disembed knowledge from specific locations and temporal settings, transcending personal networks so that knowledge is made available across space and time and can influence remote events.[13] However, personal initiative is required to access and build upon an infrastructure of this kind to achieve technological innovation.

Links with potential investors are often complicated by the founders' reluctance to cede control over their venture. Many Cambridge firms today remain small because their founders prefer this to running a larger establishment,[14] and especially to handing over control to professional management as required by venture capitalists. But in this case the banks and the city regarded Aero Research as an unacceptable risk. Capital is required to generate further capital and impasse is often reached at this stage, unless the company can survive 'on its wits'. Members of the small high technology venture can draw on their expertise and earn consultancy fees, as de Bruyne did in the early years, though this is a precarious way of funding R & D for new product development. Currently many high technology companies never get beyond the consultancy stage to producing a product.

Above all the small company needs good links with reliable customers, and a distribution system which maintains this. Although many small firms attempt to avoid a dominant customer, the protection of a major company or public authority is often essential for a survival, hence the importance of de Havilland. It ensures a niche market and provides the basis for further expansion. However, even if a successful product is found and developed, the small firm is vulnerable to competition, and large firms have financial and legal resources which can put them at a considerable disadvantage, as described in relation to Aero Research and ICI. In acting as consultant to generate income for the new venture de Bruyne was actually strengthening the competitive position of ICI, which could claim intellectual property rights in the process he was developing while working with ICI. This illustrates a common problem for new high technology firms attempting to generate funding by selling their founders' expertise; while development work for customers through consultancy or commissioned R & D is commonly resorted to as a source of income in a situation where finance is hard to obtain, such work may be developing a competitor's product and delaying or pre-empting the company's own potential development effort.

Relations with funders, suppliers and customers take on the form of personal contacts but there are more apparently impersonal forces at work. The fortunes of a science-based venture are considerably affected by the nature of the industry entered. The products and the processes developed at Aero Research proved to have wide applicability, and drew the company into the infant plastics industry. In the early days this was not differentiated within the chemical industry, a sector which has high barriers to entry and considerable economies of scale. It was a bold move to enter this industry by specialising in the development of very new products. But the nature of the industry entered by Aero Research explains in large part why it would have been very difficult for it to be as successful or influential as a company like Hewlett Packard (founded in 1938) entering the emerging US electronics industry, which proved more hospitable to new ventures. The competitive structure of the British chemical industry (dominant producer, import controls) affected not only funding and supplies but also options for production. Current ventures developing new products and processes tend to subcontract production and often do so successfully, but de Bruyne faced difficulties when he attempted, as he thought, to license production to ICI. He had other difficulties in patenting his innovations (this occurred in the case of the strip heating process); even where patents were taken out they could be contested, as de Bruyne believes ICI threatened to do in the case of honeycomb construction material. As the plastics market matured, niche markets became increasingly difficult to protect. The company's inexperience in defending its intellectual property led to the loss of revenue from the furniture market and from its important innovation in developing the composite honeycomb material later widely used in aircraft construction. ICI was a formidable competitor and a small company like Aero Research was in a vulnerable position. Aero Research proved unable to obtain supplies at bulk-order prices, license production, or divert public procurement which relied on ICI. Potential investment was thereby discouraged. Take-over by a large firm was probably inevitable given the structure of the chemical industry. Foreign take-over was in 1947 less unwelcome to Aero Research than assimilation by a British company, a reaction found among founders of small companies in the take-over boom of the 1980s and reflects the persistence of poor relationships between large companies and their small competitors in Britain. (This relationship is predicted by Abernathy's analysis of the reactions of large capitalist firms to innovations which destabilise existing market structures.)[15]

The benefits to the small high tech venture of entering a large well resourced corporation like Ciba, especially where there is a promise of autonomy, appear to derive firstly from the increase in resources, especially for R & D required for new developments, secondly from the access to international markets provided by the large corporation and thirdly from the management skills and experience which the small venture lacks. The problems experienced by Aero Research illustrate both the small firm's difficulties in these respects and the extent to which entering a larger corporation only partially remedies these difficulties. Small high technology firms are sometimes one-product ventures whose members are not capable of following up the founding products, which inevitably have a short life. Not so Aero Research, which excelled in producing a stream of ideas and developments for new products; it was this innovative capacity which attracted Ciba but which the larger company was not able to nurture indefinitely despite considerable investment of resources. Even needed investment transforms the acquired unit and does so whether or not a degree of autonomy is formally granted to a new subsidiary. The absence of new inventions and further innovative developments was a disappointment to de Bruyne after five years with Ciba, despite the rapid pace of growth and the physical expansion of the plant. Even research laboratories on site could not satisfy him, partly because they were concerned primarily with development and consolidation rather than encouraging new ideas. The work had to conform to Ciba's broad product strategy which affected the areas of research. There are very considerable differences in the group dynamics of the research team in a large corporation from that in a small venture where the members are living on their wits.[16] For these reasons additional resources do not necessarily produce commensurate innovative output. Aero Research developed products and processes which were open to considerable economies of scale, with which a small firm could only succeed in the early part of the new product's life cycle. But Ciba's concerns proved difficult to combine with developing innovative new products at the rate at which Aero Research had earlier generated new ideas.

The potential international marketing capacity of the large corporation can also prove a disappointment, as it did for the Duxford group, because a local subsidiary has difficulty obtaining influence over the adoption of its products and their diffusion in the market by the corporate sales organisation. The introduction of corporate controls and systematic procedures can improve the management of an ill-run venture, but excessive concern with management systems is counterproductive and can inhibit the capacity for innovation. Finally the price of resources on these terms is size, which entails inevitable complexity. Academic entrepreneurs whose companies have recently been taken over have found the corporate environment uncongenial for reasons not unlike those described by the founder of Aero Research.[17] For de Bruyne the administrative burdens of running the subsidiary of a large corporation provided the main disincentive to his remaining with Ciba. His real talents lay elsewhere.

The scientific instruments industry, into which de Bruyne moved with his small enterprise, Techne Ltd. (which he had founded in 1948), has lower barriers to entry than plastics, fewer economies of scale and a more competitive structure than chemicals. The company grew rapidly to about 100 employees and thereafter remained at about that size for the next 30 years. Techne represents the first of the Cambridge spin-out companies to be founded later by academic entrepreneurs using resources obtained by selling their first venture. As the study of the Cambridge phenomenon has shown, such 'second generation' companies and their subsequent developments have provided the basis for the growth of high technology enterprise in the region.[18] The company weathered economic fluctuations, but over 40 years Techne did not grow into a major player, again anticipating limitations on the growth of other Cambridge phenomenon firms.[19]

III

Technological Determinism and the Role of the Entrepreneur

Giving attention to the role of enterprise in technology transfer can throw light on the problem of technological determinism. Technological enterprise obtains its prestige in part because entrepreneurs are heralded as those who advance technology, as individual agents of technological progress.[20] Yet such thinking goes hand in hand with widely held assumptions that technical progress is automatic, self-generating and inexorable, not dissimilar from trends in climate or natural selection. If technological change would have occurred anyway under the impact of structural change, the specific actions of entrepreneurs or other agents of change can be no more than incidental. These two ways of thinking about technological progress can recognise either the significance of human agency or of the determining influence of structural factors but not both.[21]

Technologists can change the world through their actions but at the same time they are severely constrained, not least by past choices, their own and those of others, which determine the range of options open to them. In the aggregate and in retrospect these opportunities and restrictions on choice appears as objective structural forces shaping outcomes and advancing technology. But to present technological innovation and diffusion as processes which are inevitable and self-generating is to neglect the specificity and subjective context of human agency. Detailed study provides evidence of the contingencies, chance happenings and unexpected personal contacts which in practice shape technical development and which reveal that events might have occurred otherwise. The interpretations and purposeful actions of participants mediate and bring about what appears retrospectively as the inexorable advance of technology. To those engaged in technical innovation, opportunity and constraint are always mediated by perception and interpretation. The meanings participants attach to their experience provide the basis for their motivation, setting the process of technological innovation apart from natural selection. Innovations can develop in parallel under different conditions; similar technological outcomes can result from varied chains of action variously motivated.

The widespread demand for the products which Aero Research was developing, the fact that they met recognised needs in the aircraft construction industry, led to the development of synthetic adhesives and innovative aircraft construction materials elsewhere, such as at Dupont. Some of de Bruyne's ideas, for composite construction material, for example, reached America without patent protection, through personal networks which here worked against the interests of Aero Research. According to de Bruyne, 'a little man in the Air Ministry explained the honeycomb process to the Americans'. The failure of Ciba to penetrate US markets limited the influence of Aero Research's innovations on a global scale.

In their relations with powerful organisations, however hard they attempt to break with convention and find new bases of power or refuge, the founders of small enterprises have few degrees of freedom and often find themselves incorporated in, and in part helping to reproduce, institutions which maintain existing patterns in the accumulation of capital. This occurs when their own capacity for accumulation through successful innovation is harnessed by more powerful organisations.

The way in which innovative products were devised and diffused in this specific setting encapsulates worldwide developments. Indeed the original capital for the purchase of the site at Duxford derived from the de Bruyne ranches in Chile, further indication of the global dimensions of this enterprise. The war exerted constraints on the development of Aero Research Ltd., but provided access to German experience in melamine resins and created markets for its aircraft products. The recourse to a foreign corporation for investment capital reflected the competitive structure of the British chemical industry and the industrial policy of the period. The shortage of investment capital in Britain and its availability in Switzerland reflects wartime experience and market relations in the two nations. But such global forces are no more than chains of interaction stretched across space and time. In such a case we see in microcosm the influence of far-flung knowledge networks and circuits of capital which underlie technological change.

IV

Conclusion

There has been considerable interest in recent years in new technology-based firms, which have been viewed as a major vehicle of high technology industrial growth and as sources of innovation in an 'enterprise economy'. Recently the limitations of such ventures, the difficulties of sustaining growth and their vulnerability to take-over have been identified . Aero Research demonstrated 50 years ago both the vitality and the weaknesses of this form of enterprise. In summary, the case of Aero Research has illustrated four characteristics of advanced technology-based enterprise which sets this activity off from other types of enterprise and accounts for these strengths and weaknesses. The first characteristic and source of strength is the capacity to build upon a scientific knowledge base centred in universities and on an information network by means of which knowledge can move into the realm of commercial activity. The second characteristic is collaborative team work among specialist professionals; here a distinctive group dynamic sustains the capacity to sight opportunities and to effect a technical breakthrough ahead of better resourced organisations. Both characteristics can give rise to difficulties if new knowledge is not harnessed to create successor products to the original innovation (in response to the shortening span of product lives) and if the innovative technical team splits or fails to introduce professional management. The third characteristic of these firms is a close relationship with a major company or organisation (more rarely with a few such organisations), often a user, which is usually a requisite for their commercial activity and survival. This relationship, though stemming from weakness can be a source of strength, depending on the nature of the dependence and relative bargaining power. The fourth characteristic is a vulnerability to take-over by corporations in search of innovative capacity or leading edge technology; a result among other factors of resource constraints and managerial inexperience. The experience of Aero Research, though in certain respects unique, illustrates the processes at work which account for the importance of these characteristics in innovative technological activity.

The distinctive features of many innovative technology-based ventures frequently derive from their role in the process of technology transfer from university into industrial use; this role also accounts for their diversity, which follows from the variety of trajectories of technology transfer. A better understanding of the process of technology transfer which accompanies technological innovation calls for further qualitative research, in which studies from the past can play an important part.

NOTES

I would like to thank Dr Norman de Bruyne and his former colleagues for their generous help, Ciba Geigy for allowing me to look through its collection of material on the early days of Aero Research, C. J. Weeks, H. Q. Information Services at ICI for making available ICI archive material and Dr Jonathan Steinberg for encouraging me to write up this case.

1. Pye Radio (1928), Unicam Instruments (1934), Labgear (1939), Pye TVT (1939) and FBC (1939) were Cambridge companies near-contemporary to Aero Research in their founding dates (three of them set up in the shadow of the coming war), but of these Aero Research appears to be the only one whose founder was an academic scientist turned entrepreneur. De Bruyne knew of no 'role models'. The only previous such venture by a scientist was that of Horace Darwin who set up the Cambridge Scientific Instrument Co. in 1881. The Pye Group had been set up by a W. G. Pye, a technician from the Cavendish Laboratory, in 1896. See Segal, Quince and Wicksteed, *The Cambridge Phenomenon: The Growth of High Technology Industry in a University Town* (2nd ed., Cambridge , 1985).
2. Norman de Bruyne's unpublished memoirs (*My First Seventy Five Years*) have been deposited with the Cambridge University Library. copyright their author (Additional Manuscripts 88720). Other sources of information on Aero Research are: N de Bruyne, 'The Establishment and Development of Aero Research Limited' Appendix I in R. Edwards and H. Townsend, *Business Enterprise: Its Growth and Organisation* (1958); idem, 'A Personal View of the Cavendish 1923–32', in J. Hendry (ed.), *Cambridge Physics in the Nineteen Thirties* (Bristol, 1984); Ciba Geigy Plastics , '*Fifty Years at Duxford*' (company information booklet, Duxford, Cambridge, 1984).

3. Cf survey data reported by C. Monck in P. Quintas, R. Porter, D. Storey and P. Wynarczyk, *Science Parks and the Growth of High Technology Firms* (1988) and by R. Oakey, R. Rothwell and S. Cooper, *The Management of Innovation in High-Technology Small Firms* (1988).
4. As the work of Langrish *et al.* has revealed: J Langrish, M. Gibbons, W G. Evans and F.R. Jevons, *Wealth from Knowledge* (1972)
5. J. Hendry (ed.), *Cambridge Physics in the Nineteen Thirties* (Bristol, 1984), p. 88
6. Correspondence between de Bruyne and ICI in the 1930s, made available to the author by Dr. J. Clives Weeks, H. Q. Information Services at ICI (ICI 147.10.157). In a commentary on this evidence, Dr. Weeks pointed out in a letter to the author (16 Sept. 1991): 'However, ICI had many patents pending at that time relating to resin production and fabrication and it would not be difficult to accept that if Aero had tried to patent a process in an area where ICI already had inventions, then this would naturally be contested by ICI.'
7. ICI correspondence, *loc. cit.* ICI has no record of the contested honeycomb construction patent.
8. See Segal, Quince and Wicksteed, *The Cambridge Phenomenon.*
9. These studies, still underway, take the form of what has been called 'action research', that is involvement by the researcher in the activities of the researched phenomena, in this case through consultancy and project work in the companies concerned as well as through formal interviews with managers and employees and the use of company documentation. See G. Susman and R. Evered, 'An Assessment of the Scientific Merits of Action Research', *Administrative Science Quarterly*, Vol. 23 (1978), pp. 582–603.
10. Similar evidence regarding financial motivation are reported in Segal Quince, *The Cambridge Phenomenon* and from the United States by E. Roberts, *Entrepreneurs in High Technology, Lessons from M.I.T. and Beyond* (Oxford, 1991).
11. Some of the effects on performance which can result from technical entrepreneurs failing to introduce professional management are detailed in E. Roberts, *Entrepreneurs in High Technology.*
12. See E. Garnsey and V. Fleck, 'Acorn Computers and Technology Policy', *International Journal of Technology Management,* No. 3–4 (Dec. 1987).
13. A. Giddens, *The Consequences of Modernity* (Cambridge, 1990); D. Harvey, *The Condition of Post Modernity* (Oxford, 1989).
14. See A. Saxenian, 'The Cheshire Cat's Grin: Innovation and Regional Development in England', *Technology Review* (1988), pp.67–75
15. W.J Abernathy, *Industrial Renaissance: Producing a Competitive Future for America* (New York , 1983).
16. See E. Garnsey and S. Wright, 'Technological Innovation and Organisational Opportunity', *International Journal of Technology Management*, Vol. 3 No. 5 (1990).
17. E. Garnsey and J. Roberts, 'Growth through Acquisition for Small High Technology Firms: A Case Comparison', in S. Birley (ed.), *Building European Ventures* (Amsterdam, 1990)
18. Segal and Quince, *The Cambridge Phenomenon.*
19. See A. Saxenian, 'The Cheshire Cat's Grin', pp.67–75.
20. See for example G. Gilder, *The Spirit of Enterprise* (New York, 1984) for a celebration of the entrepreneur's role.
21. See A. Giddens, *The Constitution of Society* (Cambridge, 1984). Schumpeter's work on the role of enterprise in technical progress deals with both sets of factors. J. Schumpeter, 'Economic Theory and Entrepreneurial History' reprinted in R. Clemence (ed.), *Essays of J.A. Schumpeter* (Cambridge, MA, 1951).

REVIEW ARTICLE

Crisis in Government

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Keith Middlemas, *Power, Competition and the State, Volume 2: Threats to the Postwar Settlement: Britain, 1961–74* (London and Basingstoke: Macmillan, 1990. Pp.x + 469. £45.00).

Keith Middlemas, *Power, Competition and the State, Volume 3: The End of the Postwar Era: Britain since 1974* (London and Basingstoke: Macmillan, 1991. Pp.xx + 586. £45.00).

These two volumes of Keith Middlemas's trilogy on post-1940 Britain cover the period from 1961 to 1990. Together they contain something approaching half a million words, and the detail, delivered paragraph after paragraph, is relentless. Fact follows fact because Middlemas appears to be performing three roles at once. His first is that of historian, evoking the events, moods and attitudes of the past. At this, he is often successful with a sharp ear for the apt quotation. The mood of a spent government, for example, is well caught in Frank Chapple's recollection of a meeting between Callaghan and the TUC General Council shortly before the 1979 election: 'I felt a momentary despair: the unions had so much to answer for, the government simply had no spirit left and were just whining to us' (3:167).

The second mantle assumed by Middlemas might loosely be characterised as that of social scientist. The fruits of a wide reading of economic, political and sociological literature are inserted into the main text alongside his recording of both specific and general developments. Middlemas in this guise is less convincing. Certainly, as far as the economics is concerned, much of it is highly derivative, with almost no critical comment or analysis. There is also a strong tendency to proceed by allusion, quickly skipping from one secondary source to another, without stopping for a deeper discussion. Even such reporting is at times unsettling and questionable. When Middlemas touched on topics on which I profess to know a little, I found his comments misleading and often inaccurate. The description of marginal cost pricing and historic cost accounting as alternatives seemed dubious, as did the succeeding implied statement that marginal cost pricing would ensure profits (2:31). One of the main criticisms made in the 1940s against applying marginal cost pricing in nationalised industries was that it might in fact produce financial losses in industries with increasing returns. Encountering such misleading statements is unsettling, suggesting as it does that there might be similar transgressions on topics with which one is less familiar. The inaccurate calculations of real interest rates on pages 494–5 of volume 3 I have attributed to

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rotten typesetting and proof-reading. This is Middlemas at his worst. Much of the reporting of the various disciplines takes up a lot of space, seems of dubious worth and, most importantly, detracts from his third role, that of a close observer of the development of thinking about the role of state and government in Britain since World War II. It is in tracing changes in the perceived role of state and government that Middlemas is at his most interesting and thought-provoking. Appropriately, it is with this third Middlemas that I intend to spend the remainder of this review.

Middlemas's main argument is that in 1974–75 the assumptions, aims and practices which had combined to form the post-World War II settlement finally broke down. The origins of the slide away from a post-war 'consensus' is identified by Middlemas as beginning in July 1966, when trade union dissatisfaction with their treatment by the Wilson Government became apparent. From then, until the 'crisis' of 1974–75, union leaders, politicians and industrialists became increasingly dissatisfied and disillusioned with attempts to achieve aims and ambitions outlined in the 1950s and early 1960s. Long before its more celebrated iteration in October 1976, the warning that 'the time had come when the British people had to live within their means' was sounded by James Callaghan on 22 July 1966 (2:142). Lying behind the deterioration in relations between government, industry and unions which occurred between 1966 and 1975 was the realisation that not only would expectations have to be trimmed, but that also for all of the tripartite talking and planning of the post-war years, not much had been achieved. Reflecting on the political crisis of July 1966, Middlemas notes that 'from then on, the awful question about the power of government and the capacity of the state in its various forms actually to change patterns of behaviour preoccupied them all until, after almost another ten years, a contrary view began to intrude, in which it was argued that governments and states were *intrinsically* incapable of achieving this sort of ambition' (2:150).

As the ideas about 'institutional *rassemblement*' around the concept of planned modernisation broke down, government was no longer able to assume tripartite co-operation and compliance in the pursuit of apparently common aims. Instead, the pre-war problem of how aspirant economic reformers could overcome the resistance of vested interests re-emerged. More bluntly, to what extent could a government force people to act in what the government perceived to be the wider public interest? This tension between individual rights and utilitarian benefits, evident during the emergence of 'In Place of Strife' under the Wilson Government, came to a head under the 1970–74 Heath Government. On the one hand, the Heath Government's liberal and optimistic trust in individual behaviour allowed it almost to end censorship of books and plays. On the other hand, within one month of taking office, the Heath Government was using the Emergency Powers Act, to combat successfully a threatened dock strike, and it was to go on to make greater use of this Act than any other government since the 1940s. Similarly, in the Industry Act of 1972, the government acquired and used powers of industrial intervention greater than any wielded by government since the days of Clement Attlee. Elsewhere, the Heath Government was to suspend Stormont and begin direct rule in Northern Ireland. In his perceptive and empathetic critique of the Heath Government, Middlemas clearly points up Heath's view that while individuals should be emancipated, their continued emancipation relied upon their exercise of self-discipline. When contracts were reneged upon, then the role of the state was legally to enforce those contracts. Underlying this enforcement role of government, was the assumption that government, exploiting greater expertise and information than that available to individuals or groups, not only represented the 'greater good' but also had a longer perspective and vision. For Middlemas, Heath's outlook was reflected in his 'natural affinity for experts and officials with minds geared to long cycles rather than the "week in politics"'(2:284), an affinity which was strengthened by his need to win mandarin and institutional assent for programmes which enjoyed neither party unanimity nor popular appeal.

The crisis which Middlemas discerns as accompanying the end of the Heath Government was ultimately caused by the failure of government to achieve a set of aims when faced with opposition or non-co-operation from institutions on whose compliance earlier governments had counted. The crisis, if that is what it was, does appear to have involved a considerable reappraisal of what government could deliver and, therefore, what the public could expect from government. To the growing concern with the constraints on government's abilities was added, from the mid-1970s, an awareness of the limited goods which could be delivered by a weak economy. The especial contribution of such Conservative thinkers as Keith Joseph and Alfred Sherman at the Council for Policy Studies was to link the growth of government itself, as represented by public expenditure, to the causes of economic weakness. The 'Thatcher effect' may prove to have been greatest in altering public expectations and perceptions of government, than in actually radically altering the role of government. Opportunities to reform radically the social security system and the structure of utility industries were eschewed. Changes in the organisation of the National Health Service, in weapons procurement or in the remit of the Property Services Agency had all begun during the Heath Government, as also had the growing concern with reforming the rates system.

The fundamental difference identified by Middlemas between the Thatcher Governments and the Heath and other pre-1979 administrations concerned 'populism', the direct appeal to the electorate, by-passing the administrative structure of government and the civil service. In a form of logic, since the machine of government was held to have revealed its inability to achieve its aims, then it made sense simply to circumvent it. This was especially appropriate if sections of that structure, particularly at local government level, were held to have been captured by unrepresentative groups. Such appeals from the top straight to the rank-and-file were also to be found in industry, notably in British Leyland under Michael Edwardes and the British Steel Corporation under Ian McGregor. This populism was the natural counterpart for antipathy to large, consensual government. It was expressed in Mrs Thatcher's obvious dislike of professional elites and in the professed determination of her ministers not to be 'run' by civil servants. In practice, much of the rhetoric had little actual impact, but it contained an enduring perception of the Heath-style of government, namely that it was insufficiently democratic. In contrast to a depicted style of government in which unselected civil servants and experts 'managed democracy', the Thatcher Government claimed to be driven directly by the electorate. Hence, the increasing references to Government having secured a 'mandate' for their policies from the people at each General Election, albeit from less than half of the electorate and on the basis of party manifestoes which, as in 1979, contained no reference to policies, like privatisation, which were to be adopted in mid-government.

This approach to the people against the institutional vested interests of big government, unions and federations struck a seam of popular opinion which Enoch Powell had previously tried to mine. Enoch Powell, whose influence on her thinking Margaret Thatcher openly acknowledged, had most infamously adopted a populist approach in his anti-immigration speech of 21 April 1968, when recalling the Tiber 'foaming with much blood'. Yet, as Middlemas argues, this speech was as much a general protest, against aloof and distant politicians who thought they knew better than the people, as a specific attack on immigration. Whether in his calls throughout the 1960s for reduced public expenditure and borrowing, for denationalisation and his persistent opposition to Britain's entry into the European Economic Community, or his attacks upon the fundamental union immunities guaranteed by the 1906 Trade Disputes Act, Powell continually implied that the citizen's rights of choice were being ignored by fallible, over-size government which represented its own wishes as being the 'national interest'. The appeal against an unrepresentative centre deaf to the voices of ordinary people was also to be made variously by Tony Benn and the more active left-wing sections of the Labour Party. The growing support for minority groups given by some local Labour councils was also presented as an indictment of government (and Labour Party headquarters) neglect of ordinary powerless citizens. Why such views and populist appeals became increasingly effective was because by 1975, consensual, large government was seen to have collapsed, and the aims which it had traditionally pursued were increasingly being questioned. The C1 and C2 sections of the electorate in key marginal areas like the West Midlands who increasingly voted Conservative exhibited a disinclination to finance much of the welfare and transfer payments of the post-war settlement from which they were less likely to benefit.

The tracing of the rise of 'populism', the growing disillusion with central government and the eventual collapse of consensus and the post-war settlement forms the heart of these volumes. Much of the argument is thought-provoking and supported by a mass of factual material. Yet, for all the information, there is little satisfactory explanation of why changes occurred. That changes in attitudes towards the scope and role of government did occur seems clear and the attitudes and reactions of ministers, civil servants, union and industrial leaders to such changes are faithfully recorded. But there is little sense of the extent to which fundamental economic factors, such as shifts in industrial structure and personal income, influenced such change. The concentration on events within central government and at the top of union and industrial organisations compounds the impression of looking the wrong way. Middlemas, through a collage of detail, produces a picture of increasingly distanced governments which struggled to monitor and react to changes within economy and society. Yet, if governments became increasingly ineffective, why devote so much time and print to their study? It is not that they are not worth studying, but that a study which records reactions to change, but devotes so little space to analysing the sources and direction of the causes of change is ultimately unsatisfactory.

Book Reviews

B A. HOLDERNESS and MICHAEL TURNER (eds.), *Land, Labour and Agriculture, 1700–1920: Essays for Gordon Mingay* (Hambledon Press, 1991. Pp.xxv + 262. £35).

If anyone deserves a *Festschrift* it is surely Gordon Mingay. His has been one of the most potent influences on the direction taken by British scholarship in agricultural history since the Second World War. For this volume a group of former research students, colleagues from the University of Kent, and academic friends have put together a set of essays celebrating Gordon Mingay's achievements.

The common thread that unites the different essays is provided by Mingay himself as the contributors follow themes he pursued in his research and writing: landed society; the small farmer; land and labour; agricultural change. The result is that most of the major issues that have exercised the attentions of agricultural historians during the past four decades are represented here. The decline of the cottager and squatter during the decades following enclosure is considered by John Beckett. On a similar theme, Donald Ginter assesses the decline of the small landowner, and suggests that much of the debate about this has been misplaced, based on assumptions of a 'golden age' of the yeomanry that probably never existed. The standard of living debate is engaged by T.L. Richardson, with a study of conditions of life for agricultural labourers in Essex between 1790 and 1840. The attitudes and involvement of labourers in anti-corn law agitation in Wiltshire are the subject of Edwina Newman, who notices common ground between this activity and the later development of trade unionism. W.A. Armstrong essays a regional study of the effects of the First World War on the different sections of rural society, taking Kent as his example.

On the theme of agricultural change, Robert Dilley examines the livestock husbandry of Cumberland between 1660 and 1870. B.A. Holderness re-examines the concept of high farming. He shows how, in the mid-nineteenth century, the term became identified with the development of intensive mixed husbandry based on high feeding, and goes on to consider how versions of this system were practised in eastern Norfolk. Nicholas Goddard takes up the theme of how the innovative landowner or farmer was likely to learn of new developments. He examines the *Journal* of the Royal Agricultural Society of England and other periodicals as media for the diffusion of knowledge, and considers the efficacy of many of the measures advanced in the articles. Rarely, he notes, do their authors consider the financial effectiveness of their suggested improvements.

F.M.L. Thompson's essay, 'An anatomy of English agriculture 1870–1914', examines the period commonly described as the 'Great Depression'. He questions whether such a term may justly be used for an industry that was undergoing major structural change. Looking at statistics for agricultural production county by county he concludes, as did T.W. Fletcher some years ago with a less extensive study, that there are no grounds for describing English agriculture as going through a general depression during this period. Agricultural production is Peter Dewey's concern also, as he considers those factors that enabled British farming to go through the First World War with a much smaller decline in production than most European countries.

Investment by landlords in farm buildings during the mid-nineteenth century is the subject of A.D.M. Phillips' essay. Taking a sample of estates in the Midlands he finds that buildings represented a major capital outlay for the landlord – an average of about £3.30 per acre. The benefits for the operation of the farm were clear, but the financial return for the landlord was often limited. Michael Turner takes up another aspect of landowners' affairs as he studies the finances of the third Duke of Bridgewater (the Canal Duke) and the subsequent succession of the estates in the absence of direct heirs.

Here is a solid collection of essays. Being in the mainstream of agricultural history they might seem to have limited value for business historians, but with themes such as investment, innovation and structural change they cannot lightly be dismissed.

University of Reading JONATHAN BROWN

DAVID EDGERTON, *England and the Aeroplane: An Essay on a Militant and Technological Nation* (Basingstoke and London: Macmillan, 1991. Pp.xx + 139; illus., paper; £14.99).

Most historians who have been concerned with aviation would agree that undue economy in public expenditure led to the aircraft industry being underdeveloped in the inter-war period. Accounts of the post-war aircraft industry, for example Charles Gardner's *British Aircraft Corporation* (1981), likewise tend to deplore government economies that led to the cancellation of many research projects. There was no lack of public expenditure in wartime, but Correlli Barnett has claimed in *The Audit of War* (1986) that the British aircraft industry's performance from the late 1930s to 1945 fell short of its German counterpart.

David Edgerton challenges all these views, arguing that, contrary to the picture presented in Martin Wiener's *English Culture and the Decline of the Industrial Spirit* (1981), the British elite was interested in technology. In particular, it was interested in airpower as a substitute for landpower. He shows that even in 1914 Britain had more aircraft in relation to the size of its army than other great powers did, and that the British were pioneers of strategic bombing. Indeed, in his view, 'irrational faith' in the bomber 'led to massive investments in machines which could not be used for fear of retaliation in 1939, did not work between 1940 and 1943, and pointlessly destroyed people and buildings thereafter.' He characterises post-war Britain as a 'warfare state' at least as much as a 'welfare state', with massive R & D (in relation to Britain's resources) being devoted to the former.

Edgerton himself describes his essay as 'rhetorical and polemical', with 'a high ratio of assertion to detailed evidence'. His lively approach can be justified as necessary if readers are to be persuaded to re-examine their assumptions and prejudices. On the other hand, I am unhappy about his description of the British approach to warfare as 'liberal militarism', since he confines the meaning of 'liberal' in this context to 'thinking about war in economic terms', to the exclusion of other aspects of liberalism. 'Economic militarism' would be less ambiguous.

Business historians will be particularly interested in his account of the aircraft industry as largely a creation of the state. Firms depended upon government contracts and governments tried to keep firms going by doling out contracts in hard times. In the 1930s pre-rearmament firms were not as small or poor as is sometimes implied: the larger firms were very profitable and Hawker Siddeley, created through merger in 1935, was one of the top 30 British manufacturing employers. Then, as in other periods, Britain had a very large share of world exports of aircraft, with the Air Ministry apparently being strongly supportive of the efforts of private firms.

Edgerton justifies the use of 'England' in his title on the grounds that 'the aircraft industry was English: it was created and grew in the South of England and spread to Scotland, Ireland and Wales in wartime'. He does not, however, enquire why the industry came to be concentrated in those parts of England that could be reached in a few hours by train from Whitehall. This aspect of a state-created industry perhaps deserves more attention.

Be that as it may, Edgerton's essay is a *tour de force*, after which the history of the aircraft industry will never be quite the same again.

University of Stirling G.C. PEDEN

N F R. CRAFTS and NICHOLAS WOODWARD (eds.), *The British Economy Since 1945* (Oxford: Clarendon Press, 1991. Pp.549; Hb. £45.00, Pb. £15.00).

Entrepreneurial academics and publishers (probably in that order) have found a gap in the market, and several new textbooks on the British economy since 1945 are heralded. This, the first to appear, sets a very high standard indeed. Most contributors are from the genus 'historical economist' and have been asked to use recent developments in economic analysis as a window through which to observe the historical record. Each chapter also has a strong narrative section; the story is both told and explained.

This blend of historical depth and analytical strength has produced work of the highest order. Dimsdale's treatment of monetary policy, for example, will not be bettered. His command of the details of policy and sympathetic account of changing theoretical perspectives are immensely impressive. The chapter on fiscal policy combines Chrystal's insufficiently appreciated work on the long-run determinants of the size of the public sector very successfully with Hatton's intelligent account of the shorter run effects of changes in fiscal policy. The chapter on nationalised industries by Dunkerley and Hare sets a concise assessment of the changing policy and performance of the public sector within a strong theoretical framework. Foreman-Peck has written a very substantial chapter on the changing structure of British trade and the main developments in post-war trade and exchange rate policies. Contributors with a more institutionalist approach have been integrated surprisingly well. Richardson's extremely thorough and balanced account reminds us that the return from three decades of trying to locate the roots of 'the British disease' in the industrial relations system has produced little in the way of theory which commands empirical support. Page's survey of the debates on the performance of the health and social services and the nature and extent of poverty in post-war Britain is extremely useful.

But there are two disappointments. First, there seems to be naïve trust in what is currently fashionable in economics. Economists have claimed a divine right to alter their mind in fairly dramatic ways (witness the breath-taking changes between editions in Prest and Coppock's *The British Economy*) and one might have hoped that historical economists would possess more critical detachment. Woodward's account of post-war inflation, for example, uses a model in which aggregate inflation comprises three components: core inflation (which is rooted in inflationary expectations, about the formation of which economists know next to nothing), demand pull and cost push. But, core inflation interacts with demand and cost factors in unpredictable ways, and the chapter essentially gives little more than an intuitive account. This is almost certainly the best that could have been expected, but some assessment of the theoretical debates and the deficiencies of his own analytical tools would have been reassuring. Similarly, Broadberry's chapter on unemployment since 1945 rests heavily upon the NAIRU (non-accelerating-inflation rate of unemployment) and its key component the target real wage, which is again empirically unsubstantiated. However, he makes little use of internal and external labour markets which appear to rest on rather firmer empirical soil. The second disappointment is in the choice of topics for inclusion. There is nothing on the performance of manufacturing industry and even less on the private service sector. This appears bizarre when there is one chapter on the public sector and three on industrial policy, broadly defined (Kirby on supply side management, Walshe on competition policy, and Armstrong on regional policy) all of which are very good, but the over-representation of policy and under-representation of sound business history is unfortunate. There will remain a role for Sidney Pollard's *The Development of the British Economy*.

University of Exeter ALAN BOOTH

WILLIAM ASHWORTH, *The State in Business: 1945 to the mid-1980s* (London: Macmillan, 1991. Pp.xii + 240. Hb. £35, pb. £11.99).

The rush to privatise formerly nationalised industries and firms in the UK in the 1980s was the product both of political dogma and public disillusion with the record of public ownership. It was also in accord with the economic doctrine that the effective functioning of a market economy necessitated the rolling back of the frontiers of the state, all the more so in the case of the nationalised sector in view of its reputation for inefficiency and dependency on the public purse. This aspect of Thatcherism, enduringly popular with the contemporary electorate and receiving only muted criticism from opposition parties, has placed a premium on objective accounts of the nationalisation era, free from political partisanship and economic determinism. It is just such an account that *The State in Business* sets out to provide. The reader will search in vain for any definable political bias, and the entire text is coloured by the author's determination to illuminate both failures and achievement in the record of public ownership. As the author of the final volume in the official history of the British coal industry covering the period after 1945, Professor Ashworth was abundantly qualified to undertake a study of this kind and the present volume is a tribute to his eye for telling detail and analytical powers.

Essentially, the book sets out to do two things, first to evaluate the economic performance of the principal nationalised sectors in the light of perceived objectives and institutional structures, and secondly to address the issue as to whether the Morrisonian public corporation provided the ideal organisational form for public enterprise. Ashworth's answers to both questions are informed by a modest awareness of counterfactual possibilities as reflected in his explicit references to alternative scenarios both in terms of ownership and organisation.

On the question of performance, Ashworth is at pains to counteract the myth that the nationalised industries were unequivocally a financial failure. In fact, they were consistently profitable at the trading level. Although it is arguable that overall surpluses and deficits are what matter ultimately, the fact that there were presistent deficits can be readily explained by the industries' obligation to pay interest on their capital to central government. What was left out of trading profits had to provide for depreciation and all net additions to capital, and for these purposes the residue was never sufficient. The blame for this, as Ashworth points out, can be laid equally on the industries themselves as a result of their own well rehearsed inefficiencies (some of them the consequence of the original nationalising statutes), and also upon successive generations of meddling politicians whose increasing tendency to see the public corporations as blunt tools of macro-economic management had baleful implications for their financial performance.

On the subject of the public corporation as the chosen organisational form Ashworth shows conclusively that the Morrisonian ideals of public accountability and service combined with high standards of business management could never be realised in practice. The image of virtually independent public boards operating at arms' length from government was steadily undermined as the political context of their activities became increasingly prominent, especially from the late 1960s. Capital spending programmes, choice of technology, the conduct of labour relations, and pricing policies all came within the purview of ministers grappling with deteriorating economic conditions and possessing a business horizon bounded by immediate parliamentary and electoral advantage. It is, indeed, the chief conclusion of this study that the commercial and financial success of the post-1945 public corporations was incompatible with British electoral politics and economic management from Whitehall.

Professor Ashworth has written an extremely useful commentary on the nationalisation era. Its judgements are balanced, the exposition is succinct and it covers a lot of ground within a short compass. It should prove to be invaluable to undergraduate students of post-war economic history whose formative years have been coloured by the persistent and at times unreasoning denigration of public enterprise and service.

Lancaster University M. W. KIRBY

RICHARD SYLLA and GIANNI TONIOLO (eds.), *Patterns of Industrialization: The Nineteenth Century* (London and New York: Routledge, 1991. Pp.xii + 276; maps. £35.00).

This collection of essays is based on Gerschenkron's views of development relating primarily to Europe. Using a concept of relative economic backwardness he derived a number of hypotheses about the patterns of European industrialisation which entailed the provision of substitutes for the missing prerequisites for modern economic growth. The most famous of these included the roles of the state and banking, the notion of the big spurt and the emphasis on producer durables and large-scale plant and the latest technology.

Inevitably with the passage of time, Gerschenkron's views, as with those of Rostow's *Stages*, have come in for considerable criticism as more detailed research reveals the inadequate foundations for some of his generalisations.

The essays in this volume, which include a number of country studies on Russia, France, Germany, Italy, Austria-Hungary and Britain as well as chapters on general themes such as the role of the state and the banks and the position of ideology, cast further doubt on some of the original propositions, but they do not totally reject the utility of the framework elaborated by Gerschenkron. Indeed, most of the contributors have high praise for Gerschenkron's contribution to the subject even though one or two (for example Gregory and Parker) have doubts about the value of the concept of relative backwardness.

But the effort devoted to confirming or refuting Gerschenkron's schematic presentation of European development brings us no further forward in explaining why the West grew rich and the East stagnated, or for that matter the differential pace of development among European nations. Perhaps, as David Good in his thoughtful essay on Austria-Hungary explains, we need to know more about the complex link between politics and economics before we can properly interpret European development. 'Once we unravel the link, we will understand better why the Empire disappeared in 1919 and why after 1750 some European countries grew rapidly, others more slowly, and still others hardly at all' (p.239).

University of Leicester DEREK H. ALDCROFT

JOHAN SODERBERG, ULF JONSSON and CHRISTER PERSSON, *A Stagnating Metropolis: The Economy and Demography of Stockholm, 1750–1850* (Cambridge: Cambridge University Press, 1991. Pp.xii + 234; illus.; maps. £30.00).

Stagnating Metropolis sets out to accomplish two different historiographical tasks. On the one hand, Söderberg and his associates intend to fill gaps in our knowledge concerning the Swedish capital (and to a lesser extent, Sweden itself) in the largely neglected period between Sweden's role as a European power and the age of industrialisation. On the other, and more important to an international audience, the book seeks to widen and deepen our understanding about European urban economics and demographic systems in the late proto-industrial phase. Stockholm is compared to a number of larger European cities during the period in question.

The major problem is that of *urban growth*. The century from 1750 to 1850 was one of demographic and economic stagnation in Europe's northernmost metropolis. Its population rose from 67,000 in the 1750s to a mere 75,000 at the turn of the century and 88,000 in the 1840s. This made Stockholm one of the most sluggish cities in Europe, dropping in rank from place 30 to 54. Moreover, Stockholm grew considerably slower than most other Swedish towns and even slower than Sweden's population at large. In explaining this stagnation, the authors scrutinize the city's economy and its demography, sometimes separately, sometimes in connection with each other.

After an introduction and having presented Stockholm's growth problems (chapters 1 and 2), the book proceeds with chapters on the decline of manufacturing (3), on labour markets (4), and on real wage trends (5). In chapters 6 and 7 on spatial patterns of wealth and poverty and trends in equality, a distinct social-structural perspective is applied. 'The Economic-Demographic System' (chapter 8) covers one quarter of the book. It draws material from earlier chapters as well as new demographic evidence to constitute what may be labelled the authors' major effort.

What do they find? Stockholm's growth problems were closely connected to its position in the Swedish economy. The crafts met increasing competition from the countryside. Trade and shipping was in a process of regional decentralisation. Even more so was manufacturing industry. The number of proto-industrial employees in Stockholm, mainly textile workers, was reduced from 9,000 in 1751 to 3,600 in 1841. The authors also ascribe this development to a lack of entrepreneurial spirit among the industrialists, as well as to a considerable rise in productivity.

The wages of cottage industry, and rural wages in general in Stockholm's hinterland, stayed at a relatively high level compared to the city, thereby giving potential migrants fewer reasons to become urban. Real wages for unskilled labourers in the capital showed a marked downward trend during the eighteenth-century, then fluctuated for some years, until a substantial rise took place around 1820. Summing up international evidence, Söderberg and his colleagues argue that eighteenth-century Europe was characterised by pauperisation, polarisation, and income redistribution towards the agrarian sector, while the first half of the nineteenth century experienced far less widespread urban deterioration. The standard of living debate must therefore be shifted backwards in time, they maintain.

Soderberg, Jonsson and Persson substantiate the commonly held view that real wage rises are accompanied by increasing inequality. The large number of salaried officials in the capital experienced a conspicuous wage decrease in the latter half of the eighteenth century. During the first half of the nineteenth century, however, the labourers were the losers, relatively speaking. According to Söderberg and his co-authors, the existence of a huge informal labour market and outdoor seasonal employment in a harsh climate placed exceptional strain on its participants. This strain had a considerable impact on demographic change in Stockholm. This link between the organisation of work and demography is both important and interesting. Not only was the Stockholm birth rate low but death rates were exceptionally high. Thus Stockholm experienced the most rapid natural decline among Europe's larger cities. The uniqueness of the city, the authors find, is limited to males between 20 and 50 with a death rate for this age group around 1840, more than twice that of Liverpool, Manchester and Whitechapel.

Besides its thought-provoking findings, *Stagnating Metropolis* is a well argued book. It contains an abundance of demographic and economic source material, the presentation of which should be particularly interesting to the business historian. A critical comment concerns the organisation of the book. The authors attempt to contribute to a variety of scholarly debates within the fields of economic, urban, social and demographic history. This is done at the expense of the coherence of the book. It has, in some respects, the appearance of a collection of articles written by different authors. This is, in fact, the case, although about two-thirds is written by Söderberg. The partial lack of progression throughout must not cloud the advantages of the book: it is a significant contribution to our knowledge about urban demography and economy in a Europe that was still mainly rural.

University of Tromso, University of Oslo JAN EIVIND MYHRE

THOMAS C OWEN, *The Corporation under Russian Law, 1800–1917: A Study in Tsarist Economic Policy* (Cambridge: Cambridge University Press, 1991. Pp.xviii + 234; tables. £30.00).

Alexander Gerschenkron once wrote that Russian economic history 'always was a political economic history'. Professor Owen agrees, noting that the Tsarist state devoted close attention to capitalist institutions, by turns promoting their development and (more usually) hindering their operation. His monograph on Russian corporate law is a case-study in this paradoxical behaviour. An opening chapter pinpoints the maintenance of restrictions against the joint-stock company in western Europe until the third quarter of the nineteenth century. According to Owen, Russia moved in the opposite direction, imposing restrictions on corporate enterprise and intervening arbitrarily in corporate life. Although the law of 1836 introduced the principle of limited liability, it also required that the charter of each company be approved by successive government departments and ultimately by the Tsar himself. The simple option of registration was not available to Russian capitalists. Confusion also reigned over the status that the charters had in law. Nevertheless, the law of 1836 established a framework for corporate enterprise. It was followed by Russia's very own *Gründerzeit* (1856–70), associated with a reduction in the rate of interest paid on government bonds and a flurry of lucrative activity, associated with the exploitation of railway concessions. Government regulation did not prevent the emergence of stock exchange speculation on a massive scale, notably in 1869. The following decades witnessed a series of projects for corporate law reform, all of which foundered on bureaucratic resistance to change. Opposition to a system of registration owed much to fears that a plethora of small companies might appear on the scene, making regulation and control much more difficult, and that widespread investment in corporations would threaten the ability of the state to raise funds. Liberalisation of corporate law also called into question the restrictions affecting ethnic minorities, notably Jews.

The main question that runs through my mind concerns the economic implications of the legal restrictions imposed by government. Owen attaches more importance to these constraints than seems warranted. The activities of thousands of trading houses (*torgovye doma*), some of which enjoyed limited liability, suggests that Russian capitalists devised non-corporate outlets for their energies. Owen explicitly ignores these businesses, on the grounds that their economic significance was limited. But this judgement is based on a measure of capital stock, rather than output. In 1900, for example, the corporate share of gross output in 12 branches of manufacturing did not exceed 50 per cent (with the exception of metalworking and rubber). In cotton and woollen textiles, the share was less than one-fifth. Yet these were amongst the most dynamic branches of all, hardly an indication that the lack of corporate status held back manufacturing output. Capitalism had a way of side-stepping the corporate law: for instance, the 1836 law restricted the number of shares that could be held by the founders, but this became a dead letter during the 1860s. However, as Owen points out, the declining significance of the old law opened the floodgates to corruption and arbitrary bureaucratic intervention, providing plenty of ammunition for professional business groups to attack the old regime.

From time to time during his careful and well-informed narrative, Owen properly reminds his readers that other factors restricted industrial development, such as lack of credit, poor transportation, weak market demand. To these one might add the structure of the tax system. A fuller analysis of these constraints will no doubt be provided in Owen's eagerly-awaited work on the formation and profile of Russian corporations.

University of Manchester PETER GATRELL

STEVEN G. MARKS, *Road to Power: The Trans-Siberian Railroad and the Colonization of Asian Russia, 1850–1917* (London: I. B. Tauris & Co. Ltd. (by arrangement with Cornell University Press), 1991. Pp.xxi + 240; illus.; maps. £19.95).

Broadly speaking, Siberia has been poorly served by western historians. In comparison with general histories or specialised monographs dealing with other parts of the Russian Empire or the Soviet Union, the literature dealing with the vast, daunting territories beyond the Urals is minuscule and totally out of proportion, not only to the region's size but also to its importance in the economic and political development of the Russian state. In his preface to this welcome addition to that small but growing body of literature, Steven Marks underlines this deficiency by stating that 'relatively little is known about [Siberia] and its role in Russian history' (p.xii). This, though, is true only in the West. Inside the Soviet Union there exists an enormous body of primary and secondary sources, archival deposits, monographs and important scholarly publications on Siberia's early and modern history, some of which he has used to telling effect in producing this first modern 'biography' of one of the most ambitious peacetime construction projects in history – the laying of the Trans-Siberian railroad linking European Russia to the Pacific.

The stated aim of the book is threefold: to add to our understanding of Siberia's place in Russian political and economic life; to characterise certain aspects of Russia's overall economic development which differ from that of the West; and to provide the only history yet written of an individual Tsarist industrial enterprise. The time span is from the end of Nicholas I's reign, through the less centralised economic policies of Alexander II, when a more *laissez-faire* attitude to private economic enterprise prevailed, to the reigns of the last two Emperors, Alexander III and Nicholas II, who sought to reimpose and re-emphasise the central role of the state in ordering the political and economic priorities of the Empire. Marks argues that the major purpose in building the Trans-Siberian was for *raisons d'état* – to assert the metropolitan government's control of its far-flung eastern possessions, to counter private initiatives and foreign influences in the borderlands, and to stifle the aspirations of Siberia's regionalist intelligentsia for greater autonomy from the centre. St Petersburg was in fact attempting to use the railway not simply as a means of transport and industrial development but as a device for accelerating the colonisation and russification of northern Asia, particularly in the recently acquired Far Eastern provinces.

Road to Power is also tripartite in its organisation. Part I gives a rather uncohesive and patchily constructed survey of Siberia's geography, recent history, population, transport, relations with the major Asiatic powers, and of the regionalist controversy. Part II provides a meticulously researched account of the tortuous debates and inter-ministerial rivalries taking place in high government circles before the Tsar finally came down unequivocally on the side of the pro-railroaders and gave his imperial signal to start building. The third section reassesses the role of Count Sergei Witte, the ambitious and intriguing Minister of Finance who more than anyone else was the driving force behind the project; examines the railroad's wider contribution to the development of Siberia's industry, agriculture and settlement; and finally describes the dreadful geophysical and climatic conditions, manpower and managerial problems, dangerous engineeering deficiencies, bribery and corruption, lack of proper book-keeping, bureaucratic incompetence, breathcatching 'bungling' and crime which bedevilled construction from the outset – thereby in many ways frustrating the very political, military-strategic and colonising objectives which it was planned to achieve.

It is difficult not to share Marks's conclusion that this example of the Russian state's participation in the planning and implementation of a major industrial enterprise foreshadows many of the problems created by the Stalinist administrative-command system of management from which the government of the former USSR is now endeavouring to extricate itself. That aside, *Road to Power* is fine piece of scholarship which makes a unique contribution to the study of late imperial Russian history in general, and to the history of Siberia in particular.

Lancaster University ALAN WOOD

LENARD R. BERLANSTEIN, *Big Business and Industrial Conflict: A Social History of the Parisian Gas Company*. (Berkeley: University of California Press, 1991. Pp.xiv + 348. $42.50).

This is an awesome book. The social history of an industrial enterprise would be a welcome contribution in itself, Berlanstein has produced a work that penetrates the core of a number of issues that straddle business and labour history.

Berlanstein's objective is to use the experience of the Parisian Gas Co. (PGC) to further understanding of the social and political impact of industrialisation in France. He analyses the company's relatively brief history from the perspectives of the various actors and within the dynamic ideological context of the second half of the nineteenth century. The economic performance of the monopolistic PGC is appraised and found to be broadly in line with prevailing trends; and the activities of the company are interpreted both as reflecting the decline in economic liberalism in the 1890s and as suggesting a model for the shift to modern industrial society. Episodes in the life of the company reveal a sluggish response to external socio-political and economic forces that required a restructuring of relationships between labour and capital, in particular a revision of the work process.

That the PGC reflected trends in French industrialisation is indicated by Berlanstein's analysis of the new social groups – the managerial class, the white collar clerical workers, and a hierarchically structured manual working class – and their responses to the capitalist system, which forms the substance of the book. The company's decision makers operated within the context of an authoritarian paternalist management and were slow to innovate either in industrial relations or in managerial styles; and their unimaginative business practices in many ways resembled those of the traditional *patronat*. Berlanstein moves on to test the thesis that clerical work became degraded as it expanded towards the late nineteenth century, and concludes that while the white collar workers in the PGC successfully resisted changes in the labour process, especially the more intense work patterns that management sought to impose, remuneration was inadequate and promotion prospects limited. Thus collective action by the clerical workers was identified as a struggle to improve pay rather than to retain control over the work process. Berlanstein then contributes to the under researched area of the impact of industrialisation on artisanal occupations and emphasises the length and complexity of the process of proletarianisation, which included intermediate stages in the dilution of skill. In their variety of experiences in the workplace and in the nature and form of their collective protest, Berlanstein believes PGC workers to have been characteristic of the new industrial labour force.

In this beautifully written book – which conveys so much both explicitly and by implication about the nature of French political and social structures and industrial history – Berlanstein's achievements are remarkable. Conventional wisdom, which identifies the nature of enterprise and entrepreneurship as constraints on French industrial progress, is subtly refined, yet Berlanstein's findings lend some support the notion that France's international position was potentially weakened by a culturally informed conservatism, risk aversion and unresponsiveness to the opportunities of mass marketing. To the dearth of empirical research on the impact of struggles between capital and labour on the French artisan and other skilled workers during industrial development. Berlanstein has added a work of vitality and great significance. Other issues are confronted in this book, such as the influence of republican politics on the industrial enterprise; and it is the apparently effortless manner in which Berlanstein moves from one specialist discipline to another while identifying their interaction, that is the most impressive feature of this book. Business historians have much to learn from Berlanstein.

University of Leeds KATRINA HONEYMAN

THEO HORSTMANN, *Die Allierten und die deutschen Grossbanken: Bankenpolitik nach dem Zweiten Weltkrieg in Westdeutschland* (Bonn: Bouvier Verlag, 1991. Pp.x + 324. DM 98.00).

Theo Horstmann's study of post-war banking policy in West Germany makes a major contribution to several historical debates. This detailed study of Allied policy-making shows clearly the limitations of the military governments' ability to impose institutional reforms against German opposition. Despite American inspired decentralisation of the large Berlin banks, the Deutsche Bank, Dresdner Bank and Commerzbank re-emerged as organisational units in 1957. The failure of the Allies to achieve a lasting reform of the banking sector stands out in sharp contrast to the successful decontrol of the German iron and steel industry.

Horstmann traces the motives of the different agents meticulously. The American administrators saw the large German banks as facilitators of the Nazis' rise to power and as crucial financiers of the German war economy. They felt, therefore, that it was politically wise to reduce the power of the large banks. They sought to decentralise the banking sector by enacting legislation which would restrict the activities of the decontrolled banks to the state (Bundesland) in which they were based. The American plans were at first supported by the Russian and French representatives in the Allied Control Council, but the British military government resisted these suggestions vigorously. The British civil servants shared the apprehension of German politicians and bankers that the decentralisation of the large Berlin banks would lead to a breakdown of inter-regional capital flows. In turn the lack of funds would prevent an early recovery of German industry. The early resumption of Ruhr coal production was a major concern of the British military government and given the economic constraints British officials saw the decentralisation of banks as an impediment.

Eager to reach an agreement in Berlin with the other occupation powers, British negotiators were willing to compromise as long as the other powers reaffirmed the principle that Germany was to be treated as a single economic unit. The Russian, however, torpedoed a compromise and bank decentralisation became one of the first victims of the ensuing cold war. As agreement in Berlin became unlikely the American military government asked the German state government to produce proposals for the decontrol of banks within their borders. German politicians, however, were reluctant to honour their request against the open opposition of the banks. In the end, the American military government decided to impose the decontrol of the old Berlin banks. At the same time, the Banks continued to operate as functional units in the British zone with the consent of the military government. The management of the Berlin banks tried, with some success, to co-ordinate the operations of their truncated banks from Hamburg. When the Bi-zone was formed British and American officials found a compromise which would allow them to carry through the currency reform. This compromise called for the creation of 30 independent regional banks which would take over the business of the old Berlin banks within the newly formed German states. The newly created regional successor institutions were placed under state supervision.

The process of negotiations revealed the high degree of disagreement between the British and American positions. Not surprisingly the German state governments implemented the Allied decrees only half-heartedly. Once the Allied control authorities handed decentralisation of banks over to German federal institutions after the currency reform, German officials sought openly to recentralise the banks. At first an interim solution based on three banking districts was found, but by 1956 the German politicians and bankers had dismantled these remnants of Allied reform of the German banking sector. This development meant the return of the old elites to the management of the large German banks.

Throughout the book the analysis rests on a wide array of archival sources. The detailed research presented in the book reveals the different motivations not only between the major actors but also the facets of opinion within various groups. For example, it emerges that a major contributing factor to the Allied failure were the divisions within the American administration in Washington as well as in Germany. Similarly, the German position was far from uniform. Once the discussion of a future banking law had been handed to the German Federal Government, individual state governments were eager to thwart any attempts to recentralise the West German banking sector. Horstmann was granted access to the Dresdner

Bank archive, and therefore can give a rich account of the bank's clandestine efforts to co-ordinate their activities after they had been split up into 30 successor institutions.

Horstmann's excellent book fills a major gap in the existing literature on German reconstruction. For the banking and monetary historian, the book's analysis of German banking legislation and operations is highly illuminating. Allied reform plans were part of a larger effort to decontrol the German economy. In this respect the book's conclusions offer valuable insights concerning the realities of Allied control, denazification and the resilience of German institutions.

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TILL GEIGER

RICHARD VINEN, *The Politics of French Business, 1936–1945* (Cambridge: Cambridge University Press, 1991. Pp.xv. + 247. £30).

The Third Republic's last tragic years and its replacement by the Vichy government mark a dramatic period in French history. In July 1940, attacked from without, undermined from within, the Third Republic committed suicide. It was – and still remains – the longest lasting regime in France since the Revolution. Its successor, headed nominally by the ageing Pétain, in reality by the devious Pierre Laval, ruled, undemocratically and subject to Nazi veto, a truncated France bereft of the northern half of the country which contained the bulk of the French population, wealth and resources. In 1945, with democracy restored, scapegoats for this debacle were both needed and sought. The left, which had gained ground during the war, singled out business, particularly big business, as a major offending element. Had not business and finance in the shape of the '200 families' shown persistent hostility to the socialist grouping that had dominated the French assembly in its last years? Had not they used the opportunity and authority of the Vichy government to reverse gains made by labour after 1936? Had not they, by word and deed, acted as pillars of support to Pétain and Laval?

Using a wealth of archival material, some of it released recently as a result of a 'wave of *glasnost* in the Archives Nationales' (p.5), Vinen shows that while the first accusation contains an element of truth, the last two do not withstand scrutiny. The factory occupation, which took place after the victory of the Popular Front in 1936, a spontaneous outbreak of revolutionary zeal tinged with *kermesse*, was a surprise both to the government and the business community. Although big business acquiesced in the Matignon Agreements (pay increases, a 40-hour week, paid holidays) it is clear that from the outset it wished them reversed. Pay increases were largely wiped out by subsequent inflation. The 40-hour week became increasingly irrelevant because of rearmament. Thus the major changes of 1936 were well on the way to being over even before a change in the political climate in 1938/39. By the outbreak of war in 1939 they were largely undone. Thus businessmen were simply pushing at an open door. As for alleged business support for Vichy, Vinen shows this to be a great exaggeration. 'Business' had no single view on any subject, let alone one as divisive as the Vichy government. True, some 'young Turks' espoused the regime wholeheartedly and took the opportunity to introduce, at least on paper, schemes for *planification* and corporatism. But for most businessmen, Vichy's aims and its ideas were irrelevant or confused. Its avowed prime aim, to encourage a 'return to the soil', remained a chimera. Feeble efforts towards corporatism were frustrated by conflicting interests within the business community, particularly between small and large firms. Planning in any real sense was impossible in a situation where access to fundamental raw materials depended on German whims. Furthermore, the political uncertainty – when would the war end? who would win it? – meant that long-term decisions were fraught with risk even if investment funds had been available (which they were not).

Vinen has produced a well written book, useful in demolishing certain myths. Though the extent to which these myths were widely subscribed to are another matter. The myth that business financially supported the right wing forces that helped undermine the left before 1939 was mainly, as Vinen admits, the creation of a handful of historians with the 'bad habit of citing each other' (p.61). The view that most businessmen were 'pillars of Vichy' was largely propounded after the war by left-wing elements whose views were greatly strengthened by the events of 1939–45. Still, insubstantial as these myths were, Vinen's book makes it improbable that they will surface again.

Queen's University of Belfast DAVID JOHNSON

ROBERT L. FROST, *Alternating Currents: Nationalised Power in France, 1946–1970* (Ithaca: Cornell University Press, 1991. Pp.xii + 285; $37.50).

This is a comprehensive history of Électricité de France (EDF), the nationalised electricity generator and distributor from its beginnings to the end of the 1960s. It covers all the major issues arising from the public ownership of one of the largest and most crucial enterprises in the period of France's rapid modernisation. Detailed discussion is given of relationships between the state and EDF, its management structure and style, pricing and investment strategies, and labour and industrial relations systems.

The approach to these issues is distinctive and quite different from those usually found in business history. Three of the chapters are entitled the Relations, Means and Forces of Production, respectively and these terms rightly suggest Frost's use of a neo-Marxist framework of analysis. This leads to an analysis which focuses on EDF's transition from a socialistic experiment in humane modernisation in the 1940s to a technocratic and private-sector oriented company 25 years later. In pursuing this theme Frost deploys a wide range of sociological and political material, and the style may be called resolutely social scientific. But this does not prevent detailed use of EDF archives and other primary materials. The broad analysis rests on a firm bedrock of documentary sources.

Central to the book's argument is the concept of techocorporatism, defining a type of corporate organisation and management which emphasises technical competence, technological progressiveness, economies of scale and hierarchies grounded in merit. The book carefully and persuasively demonstrates how such views could lead to an alliance between business modernisers, hostile to the pre-war French business inefficiency, a state apparatus dedicated to growth, and a trade union movement dominated by Marxist views about the centrality of electricity to the development of the 'forces of production'.

But this alliance, whilst powerful, was also ambiguous. In the 1940s modernisation encompassed a large element of worker co-determination, a strong concern with the social consequences of the enterprise's activity and a distancing from short-term financial considerations. But modernisation could also be constructed as hostile to all these intents, and a large part of the book is dedicated to showing how these early aims of EDF were eventually subverted.

Much of the argument of this book is persuasive, but some doubts remain. Frost concedes the 'looseness' of some of his definitions of such words as technocracy, and in some areas clarity of argument suffers from the use of very broad categories. One central area of tension is between a persuasive critique of the idea of 'Darwinian evolution', driven by economic pressures, in technology, and the belief that the early emphasis of EDF on technical as opposed to economic efficiency was a sign of a 'progressiveness' later lost. If technical efficiency is just as much a socially constructed term as economic efficiency, why is the former more progressive? This is a point especially relevant in electricity where the 'technical' doctrine of economies of scale has been rampant and yet has been a doctrine often both economically dubious and politically and socially regressive. On this key issue, as with a few others, a slightly greater clarity on what constitutes 'progressive' enterprise management would help.

Overall this is an imaginative, impressive 'business history' combining conceptual sophistication and diligence with sources. It provides perhaps the most ambitious, and largely successful, history of a major nationalised industry in western Europe.

Brunel University JIM TOMLINSON

THEODORE STEINBERG, *Nature Incorporated: Industrialization and the Waters of New England* (Cambridge: Cambridge University Press, 1991. Pp.15 + 284; illus.; maps. £30.00).

This strikes a new theme among the many monographs about the economic development of New England: industry's impact on the environment. Reflecting late twentieth-century 'green' concerns, Steinberg makes a very useful contribution to wider debates about industrialisation.

The book is in three parts. The first retraces familiar territory, outlining early cotton factory experiments at Waltham, on the Charles River, and at Lowell, on the Merrimack. For most of the century mills at both locations were driven by water power. The Merrimack basin by 1880 ranked third in the nation in horsepower per square mile, the heaviest concentrations of industry being at Lowell, Lawrence and, in New Hampshire, Manchester. To secure their energy supplies the power (as opposed to mill) companies at Lowell and Lawrence gained control of the river's feeder lakes (Winnipesaukee being the largest) some 70 miles away in New Hampshire via a property company, known as the Lake Company.

The core of the study examines the conflicts arising as industrialists exploited water power most extensively between the 1840s and the 1870s. Small farmers versus big business; local versus regional interests; customary rights versus new law; fish stock maintenance versus water contamination and dam construction; purity of water supply versus industrial and population growth: these are the major tensions and themes subjected to close scrutiny. The last chapter considers the decline of water power.

Steinberg's strength lies in his explication of the legal issues, as might be expected of a student of Morton Horwitz. Indeed Horwitz's thesis, that nineteenth-century American law was tailored to promote economic development, is well illustrated here. Steinberg is also good in examining his environmental issues separately. I felt the need to pull them together and see them as a unity at the beginning and at the end of the nineteenth century. The impressionistic views of Thoreau, which are deployed for this purpose, surely require quantitative stiffening and a more rigorous evaluation. By 1880, as Louis Hunter has calculated, the Merrimack River supplied some 900 mills with nearly 80,000 horsepower. As a counterfactual calculation, Steinberg might have estimated the amount of pollution annually caused had this energy been derived from coal-fired steam engines. Maybe the use of the river was greener than he suggests.

Despite these caveats this is a pioneering exercise in combining economic, business, technological, legal and natural history to advance our longitudinal understanding of the environment of which we are stewards. Now we need some twentieth-century analyses.

Manchester Polytechnic DAVID J. JEREMY

MARTHA L OLNEY, *Buy Now, Pay Later: Advertising, Credit and Consumer Durables in the 1920s* (Chapel Hill, NC: University of North Carolina Press, 1991. Pp.xvii + 424. $49.50).

Martha Olney has identified and vigorously pursued a historical question which has never hitherto received this degree of scholarly attention. When did ordinary American families in any number begin to possess motor cars, household appliances and the like? Was there such a marked surge in demand that it could be called a consumer durables revolution? Was this change in consumer demand patterns an autonomous one, or was it engineered by the efforts of consumer credit companies and advertisers? Her answer to the second question was 'yes' and that to the first was 'in the 1920s'.

During that decade, American households apparently went on saving for a rainy day, but were also prepared for the first time to let themselves run into debt in order to acquire durables they would not have been able to buy outright. That trend was gladly encouraged by manufacturers, some at least establishing or assisting finance houses to provide the necessary credit. As to advertising, Olney presents a useful survey of advertising in a leading women's magazine, revealing that the number of pages given up to advertising and the size of the displays both increased in this era. Then in the following decade, manufacturers began to publicise the information that their goods were available on credit.

Olney's book is one of great scholarship of which the cartoon-bedecked jacket and the zany style of the Acknowledgements give little foretaste. The 113 pages of written text are backed up by no fewer than 253 pages of technical notes, raw data and so on, and 43 of reference notes and bibliography. Her task of obtaining figures and of devising best estimates and proxies to fill gaps, and of subjecting the data to regression and other analysis, has been carried out in an exemplary fashion. This book will undoubtedly become a quarry for follow-up studies in the future.

Sadly, the author has been so preoccupied with the minutiae of this project that she has omitted to consider some of its wider implications. For instance (pp.78 ff.) the inter-war demand for durables in the US was positively income-elastic – less so with appliances than with cars – but only weakly price-elastic. Yet when we look at her estimates of real disposable incomes per household, the annual average increased only by some 10 per cent in the 1920s compared with the previous decade. Obviously there could have been little demand in the urban slums or the areas of agricultural depression; yet qualitative, or even anecdotal, evidence might have helped to identify the regional and income groups that appeared to be the main beneficiaries of this revolution. Perhaps the public servants, who had lowish incomes but secure jobs, were good targets for hire purchase transactions, as, say, postmen were in Britain for mortgages in the construction boom of the 1930s.

The absence of a wider framework will be particularly felt by British readers, whose own 'domestic revolution' (Corley, *Domestic Electrical Appliances*, 1966) dates from the 1950s. The pre-history of this revolution has been investigated, quite as rigorously and – it has to be said – more lucidly for the informed general reader by Sue Bowden, as shown in her articles on electrical appliances and on motor cars in *Business History* for January 1990 and April 1991 respectively. Like Martha Olney (p.189), Sue Bowden in the 1990 article (p.68) believes that institutional elements, such as the market for credit, have been wrongly ignored by scholars in demand theory. Comparative work of this kind makes one wish that Olney had taken the trouble to add a section, or even a chapter, setting out her conclusions plainly and putting them in a broader context. This, then, would indeed have been a path-breaking book on a topic that is of such great economic and social importance.

University of Reading T.A.B. CORLEY

JOHN L CAMPBELL, J ROGERS HOLLINGSWORTH and LEON N LINDBERG, *Governance of the American Economy* (Cambridge: Cambridge University Press, 1991. Pp.xii + 462 Hb. £40.00, pb. £15.00).

This book is the result of a project examining the changing ways in which businesses have been organised in the United States between the mid-nineteenth century and the 1980s. It consists of two opening chapters on theories of governance and a survey of the broad historical trends, eight chapters devoted to case studies of individual industries, and two concluding chapters. The book seeks to explore why and how businesses choose between markets, vertical integration and varying degrees of co-operation and association in the conduct of different aspects of their affairs. The existing approaches of economists, business historians, sociologists and political scientists are outlined and evaluated and then deployed to varying degrees in the case studies. The main explanatory models highlight transaction costs, efficiency and technology, market control and power, and cultural influences as determinants of business structures. In this respect the book serves a valuable function in bringing together a wide-ranging literature and the excellent bibliographies are particularly useful. The general theme is that no single explanation of the forms of business organization is sufficient. In addition it is argued that the influence of the state deserves particular emphasis in its roles as referee, forum, and rules-maker.

The eight case-study chapters all examine when, how, and why governance methods change in a particular industry or sector. All are informative, clearly written and generally cover a broad time period; the common themes are outlined in the conclusion. In separate chapters on steel and automobiles Scherrer provides able evaluations of the changes which have occurred during the 1970s and 1980s. Similarly Portz (meatpacking) and Kennedy (railways) discuss contemporary trends after retelling the familiar stories of the earlier developments in technology and regulatory policy in their respective sectors. Bickers performs a similar duty in examining the development of telecommunications, though surprisingly with no reference to Temin's study of the deregulation process. As the editors highlight in one of the concluding chapters, these industries indicate the shifting cross-currents of regulatory policy, even within a single industry, as different actors or different aspects of the business are subject to varied forms of regulation. This theme of the role of federal policy is particularly highlighted by Campbell, who looks at the nuclear industry, and Arnold, who traces the impact of Medicare policies on the hospital system. In different ways both of these sectors were highly influenced by federal policy, but equally both were affected by the financial markets' assessments of investment prospects; the two case studies explore this interrelationship very effectively. The same is true of Young's most impressive account of changes in the dairy industry which highlights a lesser known, but interesting, sector of the economy; her discussion is more successful than that in any other single chapter in tracing the interconnections between economic, business, political and social factors in determining industrial strategies and structures.

Much of the historical material will be very familiar to American business historians. The account of contemporary aspect is the strongest feature, even if the jury is still out on some of the trends discussed. Where, for example, Chandler's account largely ends, this book picks up the story and indictates how the industrial structures subsequently altered. The introduction of a wider range of variables is also useful for business historians seeking to integrate their work into other fields. Generally this is a book to be welcomed and recommended.

University of Glasgow MICHAEL FRENCH

EMERSON W. PUGH, LYLE R. JOHNSON and JOHN H. PALMER, *IBM's 360 and Early 370 Systems* (Cambridge, MA, and London: MIT Press, 1991. Pp.xx + 818. £33.75).

The computer industry has received relatively little attention from the professional business historian – perhaps because it is so recent and so fast moving. This excellent book is thus a welcome addition to the literature of the computer industry. It is also a fine account of R & D in an industrial enterprise that will be of interest to historians of high-tech business and in technology policy circles.

The book focusses on the first 15 years, from 1964 to 1979, of IBM's mainframe computer range – which is still going strong. The new computer range was announced as System/360 in April 1964, and the announcement was arguably the most high-risk decision ever taken by a major company in recent times – 'you bet your company', the journalists called it. The concept of System/360 was to adopt a single 'architecture' for a range of computers, from the smallest to the largest, that would replace all of IBM's seven existing computer families. It was a classic case of all one's eggs in one basket. If the strategy succeeded, it would greatly reduce marketing, manufacturing and development costs and make IBM hugely profitable. If the strategy failed, the company would probably never recover. The strategy worked, and between 1964 and 1970 IBM nearly trebled its turnover and doubled its work force – to a total of 269,000 employees. The range was re-launched as System/370 in 1970; and the 360-architecture still accounts for three-quarters of the mainframe computer market today. Until very recent times, IBM was enigmatically silent about its internal development processes, so that the only source available to historians was magazine articles of dubious veracity. However, this well-written book shows that the business decisions behind System/360 were quite as risky as the journalists suggested, and there is no shortage of dramatic highpoints.

Although the book is written by IBM insiders (the company has never allowed outsiders access to its archives) it is every bit as professional as one would expect. This book is not a PR job designed to present a pleasing image, but very much the kind of book that will earn the respect of the scholarly and engineering community for which it is intended. The book must have been scrutinised by IBM's lawyers, but they appear to have been positively benign. My acid test when reviewing the book was to see how frankly it dealt with the Future Series débâcle. In 1970, the computer industry was rife with rumour that IBM was about to replace its System/360 range with a new range – the Future Series (FS). In the event, FS never materialised and System/360 was followed by an evolutionary successor, System/370. Outside IBM it was never clear what had happened. Was FS just a ploy to wrong-foot its competitors, or had the company made a mistake? Now we know: the FS 'was the most expensive development failure in IBM's history' (p.500). When IBM gets things wrong, it gets them spectacularly wrong.

While this book primarily relates to the computer industry, it also has more general value as a case study of the business of R & D. (In this context, one minor criticism of the book is that there is no detailed breakdown of IBM's R & D expenditure – not even the R & D/Revenues ratio published in its Annual Reports. This makes it difficult to compare IBM's R & D spend with that of other firms.) It is often very difficult for non-technologists to understand exactly why in the modern world it costs billions of dollars to develop an new aeroplane, or a telephone switching system, or a satellite launcher. As this book makes abundantly clear in its 800 pages, it is because modern technological systems are awsomely complex and high-risk. That is why only firms the size of IBM, or consortia of smaller but still major firms, can compete in the global market for high-tech capital goods.

University of Warwick MARTIN CAMPBELL-KELLY

KOJI MATSUMOTO. *The Rise of the Japanese Corporate System: The Inside View of a MITI Official* (London: Kegan Paul International, 1991. Pp.x + 276. £45.).

The factors underlying Japan's rise to economic pre-eminence in the post-war period have been ascribed to a variety of factors by observers, most particularly in terms of its uniqueness, social homogeneity and work-orientation. This latest book in Kegan Paul's Japanese Studies Series attempts to provide a domestic analytical perspective on this debate. Matsumoto concentrates upon a discussion of internal corporate labour markets in medium-and large-scale Japanese corporations and this book is thus more a study of human resources within corporations than of interaction between them. The subtitle reflects the author's experience as a former official of the formidable Ministry of International Trade & Industry (MITI) and gives him licence to generalise. There are, however, no 'revelations' regarding the leading role of MITI in Japanese economic development except perhaps its small staff numbers.

Matsumoto's basic premise is that the Japanese corporate system is neither capitalist nor socialist but *kigyoist* (corporatist) and that this underlies the competitiveness and flexibility of Japanese companies. The first chapter explores the relationship between ownership, control, risk and responsibility and argues that the control of firms by shareholders has been replaced by that of employees. In Japan, personnel objectives (long-term) have thus assumed primacy over finance (short-term), principally the rate of return, which is all important for Western firms. This development is seen to be a consequence of the commitment to life-time employment and the principle of seniority where labour is immobile between firms but highly mobile within firms. Gains from specialisation are sacrificed in favour of scope secure in the knowledge that the benefits of investment in education and training remain internal to the firm. Employees are therefore asserted to have a greater degree of responsibility towards their company in Japan than in the West because they act for the collective good rather than for selfish ends. The following chapter compares *kigyoism* with companies in the US, China and Yugoslavia. The subsequent chapters are devoted to a discussion of the greater adaptability of Japanese firms to changes in technology and working practices and *kigyoism* as an economic and social system.

Matsumoto is at pains to emphasise that outside observers may fail to perceive the differences between the surface and the actuality of corporate Japan. *The Rise of the Japanese Corporate System* therefore provides a rare insight into the foundations of Japan's economic 'miracle' by an insider. His thesis is a beguiling one in that it suggests that Japanese corporations have harnessed employee self-interest for the collective good. The acknowledgement of the existence of a *kigyoist* structure offers important insights for Western analyses of Japanese corporate behaviour, strategy and mutual shareholding. The exposition however, suffers from being primarily static in that it lacks any dynamic deterministic elements. The transfer of control of Western firms from shareholders to employees, for example, would be bitterly contested. Further, Matsumoto shifts his sights after the first chapter in an attempt to demonstrate the superiority of *kigyoism*. This leads to a reliance upon international comparison where the quality of the analysis begins to falter, relying excessively upon anecdotal evidence and generalisation. The remainder of the book is devoted to quasi-economic, sociological analysis with repetition, tendentious argument, contracdiction and false analogy. The paternalism of the Western welfare state (including the US?) is criticised *à la* Hayek while that of *kigyoism* is seen as a necessary limitation. '*Internal organisational freedom more than compensates for restrictions on freedom in the market.*' The effect is the preferment of the average rather than the talented. The first chapter is therefore highly recommended to those interested in the rise of the Japanese economy post-war in that it throws new light upon corporate organisation and behaviour. The rest of the book should be avoided by all but the most curious.

University of Lancaster ROBERT READ

FRANK H.H. KING, *The Hong Kong Bank in the Period of Development and Nationalism, 1941–1984* (Cambridge: Cambridge University Press, 1991. Pp. xlviii + 991; illus. £60).

This is the fourth and final volume of Frank King's history of the Hongkong & Shanghai Banking Corporation. The earlier volumes of this work have all attracted favourable reviews and this is no exception. The great strength of King's writing is its breadth. Many other sizeable banking histories have confined their interests to the offices of the chairman and chief executive. It would have been understandable if King had followed a similar path or had limited his interests to the politics of banking and the creation of an international banking group. His ambition ran far beyond this and it has carried him to a level at which other banking historians can only gaze in admiration and envy. The Bank itself has also to be congratulated for having the imagination to commission a work of this kind and the good sense to see it through.

What this book has, and many others lack, is a view of the organisation in all its parts. From head office to the branches all aspects of activity are recorded and their implications assessed, for this is no mere recording of events. For example, in the first chapter, four pages are devoted to the Colombo branch. The effect of the War, growing difficulties in labour relations and productivity are the themes which are discussed together with their implications for the whole bank. Nor are these lost sight of, for the author returns to these topics later on. In this way the book becomes a work of reference as well as a sustained narrative. Anyone wishing to follow up a particular line of thought or action will have no difficulty in doing so.

Of particular interest in this volume is the story of how the Bank emerged from being a regional bank to become an inter-regional bank and then a multinational banking corporation. The account of the takeover of Marine Midland Bank in the USA is extremely detailed; some might say that the detail is excessive. Yet if our ambition for business history, as a discipline, is that it should be taught in business schools then this level of explanation is essential to provide information for students who can use it as a case study. Of particular interest in this episode is the amount of political participation.

Similarly the abortive takeover of the Royal Bank of Scotland was caused by political decision-making. The author seems in no doubt that this event was a loss to the British public. Time will tell. Contemporary history is the most difficult to write and the most difficult to criticise. The story is brought to a close in 1984. Throughout the project the author had free access to the archives and to the surviving people involved. He has made excellent use of both. It would be churlish to complain about any aspect of this particular book or the series of which it was part. It is business history at its best, but would it be too much to ask for a few more pictures? The illustrations have been chosen with little regard for their ability actually to illustrate.

The scope and quality of this work presents problems for other historians. How do we emulate it?

The Chartered Institute of Bankers in Scotland CHARLES W. MUNN

WENGUANG SHAO, *China, Britain and Businessmen: Political and Commercial Relations, 1949–57* (London: Macmillan, in association with St Antony's College, Oxford, 1991. Pp.xx + 257; tables and plates. No price given).

It is appropriate that a Chinese scholar working with sources in China and Britain should document with such care the end of pre-eminence as Britain was turned out of China after a century of most favoured nation treatment. The roar of approval which arose from the British nation in 1949 when the Royal Navy frigate *Amethyst* escaped down the Yangtze river from intermittent attacks by the People's Liberation Army is a reminder, not only of naval imperialism, but also of the outrage felt in Britain at rejection by an increasingly powerful Communist regime.

Once the People's Republic of China was proclaimed in 1949, British interests, which covered a wide spectrum from coal-mining and textile manufacture to banking and finance, were under immediate and sustained threat. In 1949 there were 99 British firms registered in Shanghai; only eight remained in 1955 (p.138). The withdrawal was painful as companies searched with increasing desperation for a way out through the bureaucratic minefields. The phrase 'the politics of hostage capitalism' reflects the difficulties for the Chinese of disposing of British-owned assets short of confiscating them.

The outbreak of the Korean War in June 1950, during which North Korea (backed by the forces of the Chinese Communist Party and the USSR) attacked the South Koreans (supported by the USA and her Allies, in the name of the United Nations) hastened the withdrawal of British commercial interests from China. A guarded optimism that some British concerns could work with the officers of the People's Republic of China gave way in the early 1950s to the conviction that with little common ground withdrawal was the only option.

In fact the uncompromising communist regime, determined to root out the semi-colonialism of the previous century, led to a stand-off as British – and even more as American – interests were strongly discouraged by their governments from rapprochement. Indeed, after the Korean War it was an entirely new group of entrepreneurs, sometimes led by Joan Robinson, the left-wing Cambridge economist, which, after the International Economic Conference in Moscow (1952) pioneered an 'icebreaker mission' to China. This was organised in the face of strong opposition from the British Government by the British Council for the Promotion of International Trade (BCPIT). Members eager to work with China, who from time to time negotiated in East Berlin, found government hostility unabated. Anthony Eden gave stern warnings; export licences were denied.

For the business historian, Wenguang Shao's book has two merits, for it documents the details of the painful process of disengagement as China re-asserted its authority as an independent nation, while at the same time it provides a more general view of the process of withdrawal as former colonies worldwide moved to assert their independence.

University of Glasgow OLIVE CHECKLAND

STEVEN TOLLIDAY and JONATHAN ZEITLIN (eds.), *The Power to Manage? Employers and Industrial Relations in Comparative-Historical Perspective* (London: Routledge, 1991. Pp.352. £45.00).

The role of employers in the development of industrial relations, long neglected, has received increasing attention in late years. Focusing on the last hundred years, and adopting a comparative framework, this volume brings together a number of case studies of employers' industrial relations strategies, in a wide variety of settings. The editors, Steven Tolliday and Jonathan Zeitlin, while contributing individual studies themselves, have been at considerable pains to organise the volume in such a way as to throw general light on the influences determining employer policies. The studies, accordingly, are arranged in three parts: the first focussing on the alleged peculiarities of the British industrial relations system; the second introducing contrasting experiences from a range of other countries; and the third assessing the extent of convergence of differing national models of industrial relations. There is a certain artificiality about the grouping, since most of the studies are self-contained and specialised in character, but the editors have also provided an Introduction and an extremely substantial Conclusion as a further means of pulling the volume together and drawing out of the individual studies some general insights into the nature of employer behaviour.

In their Introduction, the editors pave the way for the diversity of experience revealed in the case studies by considering the limitations of existing theoretical approaches bearing upon employer behaviour in industrial relations. Whether in relation to labour management within the enterprise, or in relation to employers' collective activity, such approaches tend to view employer strategies as the outcome of technological or market forces. Little scope is allowed for employer choice, individually or collectively. Only by discarding such determinism, it is argued, can an interpretation be developed capable of accommodating the actual diversity in employer practice revealed by empirical research. The first case study, that by Alastair Reid on British shipbuilding employers, amply demonstrates the point. Reid shows that while objective economic and regional factors undoubtedly contributed to variations in employer policies on key issues of labour management, differences of opinion nonetheless arose even between employers whose objective situation was identical. Individual variations of this kind might be influenced by company tradition or the impact of personalities, but it is clear that the editors attach particular importance to the process of interaction between employers, unions and state, in specific historical settings, as a crucial determinant of the direction of change, and of consequent diversity of experience within and between different countries. Thus in the case of Zeitlin's contribution on British engineering employers, while objective economic factors are allowed their weight in accounting for the relative lack of employer solidarity so apparently typical of British experience generally, much emphasis is placed on the extent to which a major collective initiative by employers following World War I depended for its success on reciprocal responses from unions and government, responses that were not forthcoming.

In the grouping of the various studies a clear aim is to draw out the 'peculiarities' of British employer behaviour, by setting the British experience alongside that of other countries. The studies by Homburg and Plumpe on Germany, and that by Contini on Italy, certainly point up some major contrasts, but the most intriguing case, that contributed by Howell Harris, concerns the USA in the period 1900–33. Here a group of Philadelphia metalworking firms, whose objective characteristics corresponded almost exactly with the general run of British engineering firms, are seen as exhibiting a high degree of collective solidarity and as pursuing policies widely divergent from their British counterparts. In interpreting the contrast, Harris implies that the American political, legal and cultural environment maximised the scope for choice as between alternative options, including the option of freedom from union interference. It may be, however, that objective economic factors counted for more than Harris allows, since on his own admission it was the larger firms, outside the group studied, that 'cleared a path' for others to follow. Following the non-British cases, two further studies, those by Bryn Jones and Keith Sisson, each draw on the experience of a range of countries and point up a message implicit in much of what has gone before. There is no dominant model of employer behaviour against which the experience of any one country may be judged 'peculiar' or 'exceptional'. As Jones shows, even modern automation technology has produced little tendency towards an international convergence in labour management policies. The point is reinforced in the Conclusion. Each national experience may be regarded as peculiar, in that it results from a distinctive pattern of historical change. The Conclusion itself is a formidable piece of work, drawing on material from Japan, Sweden, Britain, America, Italy, Germany and France, and containing over 200 references. Though providing much food for thought, some might find it somewhat indigestible. Nonetheless, the main thesis is intelligible and compelling. Employer policies are the outcome of choices; choices that may be constrained or influenced by the interplay of a range of forces, but real choices even so.

University of Kent JOHN LOVELL

STEPHEN P. WARING, *Taylorism Transformed: Scientific Management Theory since 1945* (Chapel Hill, NC: University of North Carolina Press, 1991. Pp.xi + 288. US $38.45).

Stephen Waring has written a book on a subject which does demand research. While the literature on pre-war Scientific Management thought is fairly voluminous – the lives and activities of numerous pioneers and propagandists in Britain and America can be read – much less has been said about events since 1945. By assessing trends in Scientific Management thought since Taylor, Waring hopes to fill this gap. To do this, he outlines the development of two philosophies. One, the 'bureaucratic', tried to perfect the so-called 'science' of organisation and continued – as Taylor had done – to ignore or simplify the human aspects of management. The other, the 'corporatist', likewise accepted organisational imperatives but attempted to cope with the human dimension. Waring looks specifically at Operations Research, job-enrichment, and the presumed 'Japanisation' of American management, and he analyses the works of H.A. Simon, Peter Drucker, and Kurt Lewin. He believes that the underlying assumptions behind these methods, occurrences and thinkers have important implications.

There are a number of problems with Waring's critique. It is by no means clear why he chose each of his specific subjects to illustrate his chief point that management theorists failed to challenge a business system based upon bureaucracy or hierarchial systems of control. Although this conclusion will arouse few surprises, its revelation – made throughout the book – is an oft-repeated theme. Alfred Chandler is similarly attacked for portraying the development of managerial capitalism as 'morally neutral': fair but not new comment. Moreover, the implications of this seeming blind-spot in the attitudes of management theorists are never made explicit.

Nonetheless, there is some valuable information to be found. Business historians will be acquainted with H.A. Simon's writings on organisational behaviour, but should find his subsequent work on cybernetics diverting. The chapter on operations research rightly undermines many a management scientist's overweening assumption that they could objectivise and depersonalise business decisions. Due to his success as a writer on management, Drucker's inclusion in the book is fully deserved, and this chapter like the ones on Lewin, job enrichment, and 'Japanisation' probes attempts to encourage more participative and inclusive business systems.

Will this book be of great value to business historians? The answer to this question can be discovered in Waring's somewhat contradictory approach to his subject. He describes himself as 'primarily interested in the social history of ideas', and, as a consequence, he is seeking in this book 'to put business management ideas in a social and historical context'. But, in truth, he admits his overriding dependency upon the actual words of the management theorists and his ignorance of their application and worldly appeal. Waring falls back on the presumption that they were addressing an audience of managers and that they must have been representative. Supplied with this easily constructed crutch, he can focus on ideas alone, and so, in his view, more easily unearth the latent contradictions and challengeable values to be found within management thought. The business historian will require a more convincing proof and a different methodology, and will regard some assessment of the impact and the influence which these ideas had as central. As research continues to reveal a diversity of management experience between firms and industries, caution would, indeed, be laudable. In this case, some established link between management thought and management practice would help distinguish between the study of the antiquarian or esoteric and the study of the relevant.

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ROBERT FITZGERALD

ULRICH HILPERT (ed.), *State Policies and Techno-Industrial Innovation* (London and New York: Routledge, 1991. £40.00).

This book draws on the expertise of the Standing Group on Politics and Technology, founded as part of an international research network, the European Consortium for Political Research. It tackles the apparently opposing principles of the rolling back of the state, and of the search for appropriate state policy for techno-industrial innovation, by examining in comparative national contexts the question of whether science-based developments require active state policies.

The essays are divided thematically into sections dealing with the changing role of the state, small internal markets and state capabilities, large internal markets and the role of the state, and small countries in an innovating world economy. Among the industrial case studies undertaken are biotechnology in France and

West Germany, the introduction of videotex in Europe and North America, Airbus Industrie, Swedish and Danish microelectronics and information technology, and telecommunications in Britain, France and West Germany, and in the United States and Japan; these studies are accompanied by broader chapters dealing with Japanese R & D policy, innovation and American industrial competitiveness, and the role of the state in the small industrialised countries of the Netherlands, Belgium and Switzerland.

The scene is set for these accounts in an ambitious opening section on the role of the state, in which three authors take on the major issues. In a demanding and sometimes opaque chapter the editor attempts to identify a new model for the design of state policy, in which direct government investment in manufacturing industry by spending in support of chosen policies is replaced by a more flexible mechanism with the state having to work in conjunction with international markets to create environments appropriate to different areas of technological endeavour. This is followed by Kenneth Dyson's more direct question: does state policy matter? The answer provided is, however, far from direct. From his analysis of western European state policies for broadcasting and new media Dyson concludes that the role of the state, while evolving, remains ambiguous. The common feature of Hilpert's and Dyson's accounts – the new position of the state – is then explored further by Frieder Naschold who examines the development of Technology Assessment (TA). It is this development which, according to Naschold, characterises recent changes in state attitudes to technology and techno-industrial innovation. Through this characterisation the author provides a clear answer to Dyson's question: for Naschold state policies do matter, as does the political complexion of the party in office.

Against this general framework the specific topics dealt with in the remainder of the book produce some rather more tangible results. Hilpert's account of biotechnology shows that the long lead-time in research and technology development required significant intervention from both the French and the West German governments, not least in the provision of good national research structures; by contrast biotechnology in Italy and the UK, described by Wendy Faulkner and Luigi Orsenigo, suffered from the absence of sufficient resources and of coherent state policies. In the case of telecommunications, Peter Humphreys argues that the introduction of new techniques reflected the character of state action in the UK, France and West Germany, action that played an important role beyond that of forcing changes in the market place; similar arguments, relating successful innovation to state intervention are presented in Volker Schneider, Thierry Vedel and James Miller's account of videotex.

Turning to large internal markets, Desmond Hickie demonstrates the collaborative international government effort apparent in the development of Airbus Industrie, the continued existence of which he describes as more than a commercial matter. The focus of the section then moves from Europe to the other major state players in the world economy – the United States and Japan. Jill Hicks compares their telecommunications sectors, before Takayuki Matsuo concentrates upon Japanese R & D policy, and Stephen Cohen and John Zysman examine American industrial competitiveness. From all three contributions a sense of trying to educate our political masters emerges. There is a common message: governmental involvement in industry is important and should take the form of investment in research, both academic and industrial. When tested against experience in the smaller countries this view is endorsed: Ron von

Tulder's analysis of Switzerland, the Netherlands and Belgium identifies a need for active government policy for R & D; the reality of government policies is then demonstrated in Andrew Jamison's account of the Swedish and Danish microelectronics industries, in which the author argues persuasively for a culturally-reflective approach to such policies.

Overall the book does not offer many startling new insights into the questions of the role of the state in fostering techno-industrial innovation. But its message about the need for active government involvement in R & D still makes welcome reading. It does, moreover, provide well argued, detailed analyses of carefully selected and mutually compatible case studies. Hilpert draws the whole together admirably in an excellent example of an internationally comparative work created by the pooling of expertise.

AFRC Central Office, Swindon MARI WILLIAMS

N F R. CRAFTS, N H DIMSDALE and S. ENGERMAN (eds.), *Quantitative Economic History* (Oxford: Clarendon Press, 1991. Pp.xxi + 251; illus.; tables. Pb. £15.00).

Clearly *Business History* is not alone in thinking that there is a market for reprinting in book form recent articles on related themes. Oxford University Press has also pursued this strategy with *Oxford Economic Papers*. This latest volume is devoted to quantitative economic history (QEH) and consists of ten papers, first published in 1987–88, with a general focus on industrial and labour economics, principally in the nineteenth century. Only two of the papers relate to the twentieth century, and only two to money and macroeconomics. The principal focus is also Britain, though case studies of the US and Australian economies are also represented together with a cross-country comparison of a single industry and the use of one country's sources to illuminate the operation of another's economy.

With many of the key quantitative practitioners from both sides of the Atlantic being represented here, this volume, when read on conjunction with Foreman-Peck's *New Perspectives on the Late Victorian Economy* (1991), can be considered a progress report on the state of QEH in, and as applied to, Britain. However, the existence of this collection demonstrates that QEH is still viewed in Britain as a subfield distinct from economic history proper, far from achieving the status and methodological consensus that Sutch has described for America in a recent issue of the *Journal of Economic History*. The editors, confident that 'the scope for economics to add value in historical study ... [is] well on the way to being realized', address this volume to economists because 'the usefulness of history to economists is far from being adequately appreciated, although there are major returns to be reaped' (p.xviii). Leaving my disagreement with this former statement aside, let's examine what is on offer here for the business historian.

Three of these papers relate specifically to industrial economics, all being broadly concerned with the measurement of productivity but all having wider implications, especially for public policy. Thus Foreman-Peck's study of the British railway system detects widespread market failure with capital costs per train-mile significantly exceeding those in other countries at the turn of the century, a product of the largely unregulated free market system which resulted in a loss of GNP per capita of at least 0.75 per cent. The prevention of wasteful competition through state ownership, as was common elsewhere, or by effective regulation would have lessened such welfare losses, though such 'a regime is not perhaps a historically plausible alternative [even though] it is one that places the liberal order in perspective' (p.121). Nor does the inherent superiority of private companies emerge unscathed from Milward and Ward's investigation into the late nineteenth century British gas industry. Here cost functions for public companies, when adjusted for possible differences due to economies of scale and market characteristics, were comparable, if not lower, to those of private undertakings. Finally, Davis, Gallman and Hutchins, in a comparative study of the British-American whaling industry 1816–42, demonstrate that Britain's early lead derived not from economic superiority but from government policy, and that its relative decline can be partially explained by the poorer quality of British crews, something again which – in the long run – was amenable to public policy and deficient investment in human capital.

It is not an undue characterisation that the conclusions of the first generation of QEH were variations around the theme that the market worked. Current findings, as we have seen from this sample of the excellent papers on offer here, qualify the standard neo-classical story and advance both the application of new quantitative methods and an economics less dominated by simple price theory. This volume is thus highly recommended, although an index and a glossary for the technically uninitiated would have been most useful.

University of Bristol ROGER MIDDLETON

MARK CASSON (ed.), *Global Research Strategy and International Competitiveness* (Oxford: Basil Blackwell, 1991. Pp.vii + 312. £45.00).

Global Research Strategy and International Competitiveness, edited by Mark Casson, has five contributors; Casson's name is on five of the nine chapters; the other authors are John Cantwell, Robert D. Pearce, Satwinder Singh, and Christian Hudson. Casson has been extraordinarily prolific; his writings on multinationals, competitiveness, business culture, and entrepreneurship are appearing in a flood. They are all fascinating, provocative, and on important subjects. This volume is no exception. I particularly liked Casson's concluding chapter on the status of the United Kingdom in international competition, based on its research and development (R & D) capabilities.

This is not a work of business history, although Casson's introduction has a seven-page historical perspective. Nonetheless, the subject matter is one that will interest business historians. There is exciting material in Cantwell's essays on international agglomeration and dispersion of research and development. His data are wonderful; his topic vital; yet his conclusion that other scholars may have understated the role of internationalisation of research is an anticlimax. Cantwell runs regressions galore, reports on his methodology, and identifies industrial sectors in which technological agglomeration has been most pronounced. The *whys* (except relative to statistical estimates) are, however, absent. His macroeconomic approach (using micro data) seems inadequate in answering the larger questions on global research strategies and international competitiveness. I would like to know which multinationals (by name) tend to have concentrated and which ones tend to have dispersed research facilities and *why*? I think I can explain Cantwell's interesting finding that in pharmaceuticals, in spite of an increase in locational concentration, technological activities were relatively dispersed in comparison with other sectors; Cantwell fails to ask the reasons. The reader wants to know *why* US and Japanese multinationals have a propensity for high concentration in homebased research and other nation's multinationals do not. Likewise, it would be worthwhile to inquire if the geographical dispersion strategies relative to R & D *within* the United States were in any way correlated with cross-border concentration/dispersion patterns. So, too, Cantwell's longitudinal data do not (as he recognises) handle the effects of corporate acquisitions by multinationals in a satisfactory manner. In short, Cantwell has opened up numerous research horizons in considering issues of multinationals' R & D strategies and international competitiveness.

Pearce and Singh have done pioneer work in identifying overseas laboratories of the 500 largest multinationals (in 1986). US-headquartered companies were the most important investors in laboratories abroad; and, the United States was *host* to more foreign laboratories than its multinationals had laboratories outside the country. (This, of course, reflects the 1980s role of the United States as both the largest single home of, and the largest single host to, foreign direct investment).

Based on Pearce and Singh's questionnaire, they conclude that despite significant diffusion of applied research, basic research is still relatively concentrated in parent laboratories; applied research abroad was marginally more important in production processes than in product development. Pearce and Singh's contribution contains much of value. Pearce has been and continues to be in the forefront in considerations of the internalisation of research and development by multinational firms.

Casson, Pearce, and Singh have a chapter that summarises 'recent trends' as perceived by respondents to the questionnaire. They found a trend towards more 'D' rather than 'R' among US and European multinationals with the opposite true among Japanese and Brazilian firms. They noted a convergence in R & D patterns among large firms of different nationalities. This chapter is filled with revealing insights (for example, on cross-disciplinary research linkages, industry decline that leads to researchers' deployment, and the logic of scope economies).

In sum, this volume provides an overview of R & D strategies and recent trends. Since the internalisation of R & D within multinationals tends to be concentrated within a limited number of firms (in the United Kingdom, the top five R & D spenders accounted for 32 per cent of corporate expenditures and 29 per cent of employment in R & D), it would have been easy (and desirable) for this book to have spent time on individual multinationals. In the urge to generalise (and probably because the Pearce-Singh questionnaire promised anonymity to respondents) specific business strategies seem buried. Likewise, there are inadequate distinctions made between Ph.D. scientists and engineers. There seems to be an assumption that both types of professionals are interchangeable; is this true?

Florida International University MIRA WILKINS

DANIEL DRACHE and MERIC S. GERTLER (eds.), *The New Era of Global Competition: State Policy and Market Power* (Montreal and Kingston: McGill-Queen's University Press, 1991. Pp.xx + 450. £18.95).

This volume is a collection of 20 essays concerning the so-called globalisation of the Canadian economy and business community. This recent but already well-worn cliché refers to more than just markets that take little heed of political boundaries; it also encompasses increased capital mobility and, most important of all, fundamental changes in the industrial workplace. Post-Fordism is the most common phrase used to describe just-in-time (JIT) manufacturing, delivery and inventory management as well as the flexible production methods that are being applied in the higher-knowledge-content industrial sectors. Almost every author quotes Piore and Sabel's *The Second Industrial Divide*, and a fair number employ the paradigm of the Paris Régulation School as exemplified by the work of Robert Boyer and others. The essays compose, together, a concerted counter-attack by many of Canada's leading social democratic and Marxian scholars against the 'global survival of the fittest' viewpoint that has been particularly vigorous in the 1980s. The authors all share similar, if not identical, methodological and philosophical assumptions, and thus provide rare coherence in a collected volume.

I will not attempt to summarise the content of all 20 essays – an impossible task in the brief review required by the editors. Instead, I will restrict my comments to the essays that are intrinsically of greatest interest to business historians; that is, those essays centrally concerned with the changes that have occurred in Canadian business since the 1960s and the industrial policies advocated to make globalisation a positive rather than a negative force in the future.

John Holme's essay on the Canadian automotive industry describes the dramatic changes initiated by Japanese manufacturers (plus Hyundai of Korea) alone or in joint ventures with the 'Big Three' American companies. General Motors, Ford and Chrysler have, in their turn, implemented varying degrees of flexible manufacturing and JIT methods in their own plants in Canada and the United States. Anthony Masi explores technological changes in the Canadian steel industry from 1970 to 1986. Canadian steel producers receive high marks for investing heavily in research and development and being the first firms to introduce basic oxygen furnaces and continuous casting in North America. Except for Masi's brief discussion of the introduction of mini-mill production utilising small-scale technologies, however, we are left wondering whether Canadian steel firms have undergone fundamental organisational changes similar to those experienced by the car manufacturers. More satisfying on this count is Jonathan Morris' essay concerning the 'Japanisation' of Canadian industry. Influenced by Japanese branch plants and joint ventures with Japanese companies, North American manufacturers of high technology goods appear to be undergoing at least a partial transformation in adapting to flexible manufacturing and JIT methods. Unfortunately, Paul Phillips' essay on the Canadian resource sector does not break the surface of macro data to allow us to evaluate the technological and organisational changes undertaken by Canadian resource multinational enterprises which are, after all, among the most significant actors in the Canadian economy.

Almost all of the remaining essays concentrate on government policy and the changes that have to be made in order to assure Canada's place among the prosperous yet socially more equitable societies of the world. Needless to say, these policy recommendations are hostile to the Thatcherite view that the best industrial policy is no industrial policy. Most provide little information on the nature of the micro actors – the private and public business enterprise – they are attempting to influence, however, this is not their main purpose. Just as our environment has been moulded by the strategies of business enterprise, it has also been shaped by government policy. Both have historically been more significant than the so-called invisible hand of the market in the evolution of the modern international political economy. These essays address in an informed and sophisticated manner the present state of Canadian policies and make detailed suggestions for future change.

Johns Hopkins University GREGORY P. MARCHILDON

OLIVER E. WILLIAMSON and SIDNEY G. WINTER (eds.), *The Nature of the Firm: Origins, Evolution and Development* (Oxford: Oxford University Press, 1991. Pp.x + 235. £25.00).

This volume comprises the papers presented at a conference in 1987 to celebrate the fiftieth anniversary of the publication of Ronald Coase's article on the nature of the firm. It is remarkable that a conference should be held to recognise and debate a single article, especially when this particular essay was largely ignored for over 30 years after its publication. The 1937 article is reprinted here, together with three other papers presented to the conference by Coase in which he explains the development of his thought in the 1930s and speculates on the long neglect of his article and its sudden recognition in the past 20 years.

The central idea advanced in the 1937 article was that the firm adopts some of the functions of the market in allocating resources within its own organisation. The transfer of employees or other resources from one department to another does not entail a market transaction. This raises the fundamental question why the market should be superseded in this fashion and focuses on its far-reaching consequences for resource allocation and the organisational structure of the firm. The paper remained unexplored until the 1970s because the firm was assumed to comprise a homogeneous entity with a clear and simple business strategy, so that the important issues related to the type of market in which it operated.

The importance of Coase's paper was recognised when it was accepted that transactions are neither instantaneous nor costless. The development of transaction cost theory provided a rationale for the replacement of market exchange by internal organisation within the firm. Many of those who were prominent in developing this strand of theoretical exploration, like Williamson, Demsetz and Winter, appear in this volume, reflecting on the influence of Coase on their work. Rosen discusses the internal market and justifies its existence in terms of the very high costs which would be involved in allowing all transactions to be determined within the market, especially those involved in gathering information. But the internal market places additional stresses on an organisation, including the need to devise a system of rewards and penalties for personnel within a framework in which performance can be assessed. Williamson, one of the leading advocates of transaction costs theory, places these relationships at the heart of all economic processes so that organisational structures and the contractual relations vested in them become the key phenomena. The importance of asset specificity, the existence of assets in plant and machinery which cannot be swiftly transformed to some alternative use, is debated as is vertical integration and similar major concerns for organisation theorists. But the common approach does not necessarily produce agreement. For example, Klein regards asset specificity as extremely important in the determination of organisational behaviour, while Demsetz believes it is less important than information gathering.

Those familiar with the transaction costs literature may not find much that is new in this volume, although the evolution of the theory is interesting, several important issues are discussed, and the suggestions for future research are illuminating. For those not familiar with this literature, the book provides a clear exposition of its origins and key ideas. These essays review a strand of theory about the firm which can no longer be ignored by economists. Business historians cannot afford to be unfamiliar with its insights into the workings of the firm, not least because it recognises the need for empirical investigation. Coase's ideas were developed during a tour of the United States in the 1930s when he visited a number of major firms. His legacy provides abundant opportunities for fruitful collaboration between theorists and empiricists studying business.

University of Aberdeen C.H. LEE

MARK CASSON, *The Economics of Business Culture: Game Theory, Transaction Costs and Economic Performance* (Oxford: Clarendon Press, 1991. Pp.xi + 286. £35).

The central theme of this work is that the cultural values held by society influence the level and nature of economic activity. This, in itself, is hardly a revelation, but what is of interest is that Mark Casson provides an analytical framework that can be used to establish under what conditions it might be appropriate to manipulate values so as to affect economic outcomes.

The cultural values that are of particular interest to Casson are those relating to trust. Societies with cultures that foster high levels of trust, he argues, are able to economise on transaction costs because fewer resources need be used to monitor behaviour. With fewer resources devoted to monitoring, there is more left over for consumption and investment, resulting in welfare improvements for both current and future generations. Trust, therefore, enhances economic performance. This being the case, it is possible to envisage a situation in which the return from resources employed in engendering trust in society might be greater than the return from the same quantum of resources employed in monitoring. In short, manipulation might be more cost-effective than monitoring.

Having established that manipulation and monitoring are alternative ways of influencing economic performance, Casson then develops a model to establish the appropriate level of manipulation required to fulfil the objectives of an optimising agent. This agent might be a politician concerned with the welfare of society as a whole or a business leader concerned with the profitability of a firm. Objective functions differ widely, both amongst politicians and business leaders, with an altruistic leader being far more concerned about the material and psychological costs born by his followers/workers than a selfish leader who is merely concerned with narrowly materialistic outcomes. For an altruistic leader endowed with a strong sense of empathy and justice, manipulation is more likely to appeal than monitoring.

At the same time, the optimal level of manipulation is also affected by the nature of society, greater amounts of manipulation being required to realign the values of a society that is prone to cheating and mistrust to one that is honest and trusting. The relative costs of manipulation and monitoring are also influenced by the nature of the product exchanged in an economic or social encounter. Thus it is generally easier and more cost-effective to monitor workers who produce a tangible output than workers producing, say, professional services where slacking is less easily detected. For the latter group, manipulation would tend to be more effective, with a leader using resources to engender a professional ethic and then relying on a sense of guilt to ensure performance.

A variety of permutations and applications of Casson's basic model are possible and these are pursued in the main body of the text. Thus the model is applied to production and the way in which leaders inspire achievement, to trade and the fateful consequences of a lack of trust, philanthropy and the provision of public goods, and under what circumstances collusion is likely to succeed. Casson also examines the relationship between different levels of trust and the interaction of groups as diverse as the family, production teams and trade unions and how economic and social outcomes might be affected. He concludes with a brief section on policy implications, mounting a sharp attack on those governments that rely solely on monitoring and the economics of personal avarice to improve performance, and finishing with a plea for both political and business leaders to promote general moral values as opposed to narrow factional interests.

This is a tightly argued and wide ranging book. Much of the analysis is formal, being expressed either algebraically or graphically, although the first and last two chapters, together with the introduction and conclusion of each chapter, are written so as to provide the intelligent layman with an intuitive understanding of most arguments. Whether the result is a text that is accessible as the author intended seems doubtful, notwithstanding appendices containing a glossary and notation. An extended verbal treatment of some of the more important issues would have been helpful.

Despite its largely formal approach, business historians and others will find much of interest in this book. At the same time, one gets the feeling that Casson attempts to cover too much ground in too short a compass, the reductionism of his approach leaving many questions of both an economic and ethical nature unanswered. Thus problems of effective manipulation in open and plural societies with access to the latest information technology, the impact that manipulation might have upon the deviants and marginal men so important to economic growth, and the ethics of manipulation itself are all questions that warrant individual research programmes. Certainly there is much more work to be done; perhaps we should be grateful to Mark Casson for pointing the way.

University of Auckland S.R.H. JONES

PAUL D. STAUDOHAR and JAMES A MANGAN, *The Business of Professional Sports* (Champaign, IL: University of Illinois Press, 1991. Pp.xi + 306. $15.95).

Sports has recently emerged as a popular subject among academic researchers. This book is a multidisciplinary anthology of 13 essays on various aspects of major professional team sports (baseball, football, basketball and hockey) in the United States. All but one of the authors of the essays are academics in the areas of history, sociology, economics, or law. Since Roger Noll's well-known seminal

1974 volume, *Government and the Sports Business*, there have appeared many other volumes on the sports business; but, few if any, cover as diverse a set of topics as this collection. In fact, several university presses now have launched special series on sports, often dealing with the business side. This volume is the latest in the *Sports and Society* series of the University of Illinois.

The collection begins appropriately with a contribution by Roger Noll, 'Professional Basketball: Economic and Business Perspectives'. Noll provides a brief history of the National Basketball Association as well as an account of most facets of its business operations, financial performance, product markets (ticket sales and broadcasting rights), and the labour market. Professional basketball is particularly interesting because no other major US professional sports league provides for both salary 'caps' (maxima) and for the 'pooling' of broadcast revenues across teams. At the same time, basketball has uniquely managed, as Noll puts it, to make all of its participants 'wealthy': owners, players and coaches alike.

Among the other interesting contributions in the collection are two essays on the earnings of professional athletes. In 'Player Compensation in the National Football League', Dennis Ahlburg and James Dworkin empirically analyse whether football players' salaries reflect primarily performance (as the owners claim and the players deny). In 'Racial Discrimination in the National Basketball Association,' Lawrence Kahn and Peter Sherer show that although average salaries of black basketball players are higher than those of white players, pay discrimination still exists against blacks once productivity is taken into account.

A problem which often characterises collections of scholarly articles whose authors are drawn from diverse fields is the use of research methods and technical jargon familiar to one discipline but not to others. As a consequence, non-economists will probably have some difficulty with the Ahlburg–Dworkin piece (which uses semi-logarithmic regression and principal factor analysis to extract performance measures) and with the Kahn–Sherer essay (and its discussion of ordinary and two-stage regression results). And non-semanticists might despair when they encounter such phrases as 'semantic polysemy and mutability' (p.266) in John MacAloon's somewhat ponderous but still interesting 'Are Olympic Athletes Professionals? Cultural Categories and Social Control in US Sports'. Non-specialist readers should find the other essays quite comprehensible, though.

Most readers who follow US sports will discover much in the volume to interest them, along with a fair number of points with which to take issue. For example, Joan Chandler ('Sports as TV Product: A Case Study of Monday Night Football') carefully analyses the reasons for the success of one of America's most popular televised sporting events. However, many will strongly disagree with her characterisation of Monday Night Football as 'a ritual, a historic performance, a tradition, a myth, not simply an isolated game' (p.57) as well as her prognostication that 'the nation's infatuation with football may be over' (p.55). And just as Gary Roberts ('Professional Sports and the Antitrust Laws') will convince many readers of the desirability of the existing monopoly structures of sports leagues, others will be persuaded by the arguments of Stephen Ross ('Break Up the Sports League Monopolies'), who strongly argues for the dismantling of the monopoly leagues and their replacement by more competitive structures.

All in all, the anthology is a very welcome addition to the growing literature on the professional sports business and should attract a wide audience. After all, as the editors point out in their introduction, there is probably no other subject that captures the interest of more people than professional sports, regardless of race, age, sex, income, or social class.

Lehigh University ROBERT J. THORNTON

EDWARD D. ROBERTS, *Entrepreneurs in High Technology: Lessons from MIT and Beyond* (New York: Oxford University Press, 1991. Pp.xii + 385. £25).

Greater Boston's Route 128 and California's Silicon Valley have become synonymous with modern industrial success and the prototype for other regions' and other nations' visions of a high-technology future. But what are the ingredients in founding and developing a successful technology-based company? Environment, economic conditions, access to venture capital, entrepreneurial decision-making, technological support, and access to customers have all been mentioned as specifically American influences. By focussing on firms in the greater Boston area, many of which have had links with the Massachusetts Institute of Technology (MIT), this study provides support for all these variables, but identifies even more critical aspects of culture and attitude that have fostered a congenial business environment.

Four case studies set the scene by highlighting some of the most successful entrepreneurs and firms in the region: Kenneth Olsen's Digital Equipment Corporation; Arthur Rosenberg's Tyco Laboratories; Samuel Morris' Transducer Devices; and Neil Pappalardo's Medical Information Technology. All had links with MIT; all were driven by that spirit of entrepreneurship the study seeks to define. To provide the basis for generalisations about the origins and make-up of such high-technology business leaders, in 1964 the author and his team began a programme of over 40 research studies. These examine the work experience and family backgrounds of key individuals, their sources of funding, and their strategies towards growth. Firms with multi-founder teams and those with single founders are contrasted; and so too are consulting and R & D firms with product-oriented enterprises. Marketing strategies and the ability to raise outside capital are also explored. A final section looks at the influences on 21 firms that have achieved 'super success' (over $5 million in annual sales) and argues that a market-oriented strategic transformation is responsible. A widespread tendency to displace the founder before super-success is achieved is a noticeable, even amongst the most successful high-technology firms.

Nearly 20 main determinants of success are identified: these range from the interesting (entrepreneurs are very likely to have had self-employed fathers; multi-founders perform better than single founders; family background and religion have no infuence on success), to the mundane (all entrepreneurs are not alike; those with a high need to achieve are more likely to succeed), but mostly appear to boil down to one conclusion: the determinants of successful entrepreneurship are complex and (though the author does not say so) difficult to predict. Nevertheless, Roberts sees a rosy future for high-technology entrepreneurship in the USA (despite some recent evidence to the contrary) and also abroad.

The author is a professor at the MIT Sloan School of Management and this book is not directed at business historians. Nevertheless, his data and interests cover the last quarter-century and so provide a mine of useful material for industrial historians interested in the role of entrepreneurship, especially where this is considered in a regional or high-technology setting.

University of Sheffield GEOFFREY TWEEDALE

LYNN K. MYTELKA (ed.), *Strategic Partnerships and the World Economy* (London: Pinter Publishers, 1991. Pp.xvii + 216. £32.50)

The theme of this collection of nine papers is collaborative international competition between firms, and between firms and national governments. According to this volume, to be deemed a strategic partnership collaboration must comprise significant joint knowledge production and mutual knowledge sharing. This definition, therefore, excludes international technology licensing (other than cross-licensing) and other one-way forms of international contractual transfers, as well as partnerships that are not knowledge-intensive.

There is a consensus in this book that the strategic partnership is essentially a transaction cost-reducing method of co-ordinating production internationally. However, two distinct viewpoints are evident: according to the first, partnerships are linked to competitiveness, being seen as efficient responses to high minimum efficient scale in global (typically technologically intensive) industries; according to the second, stress is placed on the collusive nature of inter-firm agreements, rendering strategic partnerships more akin to new forms of collusion, often with the participation of governments. Although these are not mutually exclusive, it is the second view that signals important welfare and policy questions, which are only directly addressed by one paper (by Michalet).

The volume, which includes a preface and an introduction, is grouped into three parts. Part One contains papers by Mytelka and Michalet, which both discuss the factors that predispose firms to form strategic partnerships. The latter paper is the more contentious, predicting that a contractual (rather than an equity-based) world economy will emerge based on technological links. The result will be a cartel structure founded on technology, with membership of the network constituting a prerequisite for world competitiveness. Clearly, the stability of such cartels would rely on government-imposed trade barriers.

Part Two consists of three papers focusing on intra-industry alliances. Chapter Three, by Ciborra, applies the transaction cost approach to technology-intensive industries, while the other two papers fix on industrial sectors as case material: the commercial aircraft industry (Mowery) and French firms in strategic partnerships in different types of industries (Delapierre and Zimmermann).

The third and final part consists of four papers, which deal with the industry–state dimension of strategic partnerships. Research consortia in Japan (Levy and Samuels) are argued to be a distinctively Japanese phenomenon that nevertheless can offer lessons for the West, while the experiences of the US automobile and semiconductor industries are examined by Alic. The changing regulatory environment in telecommunications industries has fostered a variety of international collaborations between firms (Jenkins), nevertheless governments still exert strong pressure to ensure the participation of domestic firms.

The final chapter, by Mytelka, looks at the European ESPRIT programme, itself inspired by the Japanese model of research consortia. The conclusion is that co-operative R & D and the networking behaviour promoted between European firms, although enhancing competitiveness, has behaved to some extent as an entry barrier.

The emphasis in this volume is clearly on technologically based industries. Consequently, the book is largely silent on whether its analytical framework is adaptable to international business in general – there are many instances of international partnerships that do not fall into the research-intensive category. Nevertheless, this collection is a valuable record of the impact of technology on the pattern of competition and a welcome contribution to the interface between the literature on international business, competitiveness, and political science.

University of Bath JEREMY CLEGG

JORGE NIOSI (ed.), *Technology and National Competitiveness: Oligopoly, Technological Innovation and International Competition* (Montreal: McGill-Queen's University Press, 1991. Pp.xix + 281; statistics and graphs. £18.95).

What has become of the neo-classical theory of international trade? If the contributors to this volume – which grew out of a 1987 symposium on oligopoly, innovation and competitiveness held at the University of Quebec in Montreal – ultimately choose to leave this question unanswered, they nevertheless leave no room for doubt as to their own view of the theory's limitations. Limitations which concern, in the first place, the neglect of the role of technology as a key determinant of national competitiveness, and in the second, the scant attention paid to the role of the state, presented here by Niosi and Faucher as the single most important exogenous actor to influence international trade.

Technology and National Competitiveness successfully marries the theoretical and empirical. The volume takes as its point of departure a reassessment of the works of American economist Wassily Leontief. This 1973 Nobel Prize winner was the first to bring empirical considerations to the highly theoretical analysis of international trade. His famous 'paradox' found that, against expectations for a nation so rich in physical capital, the capital-to-labour ratio in the United States in the late 1940s was in fact far higher for the hypothetical production of imports than for the actual production of exports. Leontief's study proved to be seminal. Other empirical analyses followed in its wake, expanding the list of 'production factors' worthy of attention, while nevertheless continuing to regard technology as an autonomous and unpredictable variable: one which should be, therefore, excluded from the analysis of international trade flows. And yet, as Christian DeBresson points out in a particularly perceptive chapter in which he highlights the *systemic* nature of technology (developing an aspect of Posner's technology gap theory of trade accorded relatively little attention to date), the importance of innovation extends beyond specific industries to related ones. Breakthroughs in one area bring with them associated successes; such technological clusters foster other virtuous circles, and clearly confer on a national economy *dynamic* competitive advantage. This, coupled with the ever accelerating pace of technological change in the world today, demand in the eyes of Dosi and Soete that the analysis of technical change be at the *centre* of economic theory, rather than peripheral to it. Indeed, the vital factor to consider in assessing national competitive advantage may well be, as Lester Davis argues, differences in the *degree of change* of the total technological intensity of exports. The case of Japan is exemplary: the total technological intensity of Japanese exports rose by a staggering 77 per cent in the 12 years from 1972 to 1984.

The example of Japan likewise provides the contributors with powerful ammunition for their second, even more forceful attack on the theories of international trade and investment: for having dismissed the role of the state as an unpredictable variable which serves only to impede the true expression of supply and demand. Niosi and Faucher urge that the state be brought back into economic analysis. They insist that 'the current framework in which trade theory is being conceptualised fundamentally limits its capacity to contribute to the understanding and shaping of our international economic environment' (p.120). For it is clear that as the importance of static natural advantage has declined, that of dynamically socially produced advantage has risen dramatically. And, as the prospering yet resource-poor industrial latecomers – foremost among which is Japan – have so convincingly demonstrated through their careful implementation of industrial policies, the state is a primary actor in the creation of such dynamic comparative advantages. The success of Japan and the newly industrialising nations has thrown into stark relief the inadequacy of *laissez-faire* recipes which see the role of the state only as a brake, never as a motor.

This interesting, enlightened and often provocative volume is to be highly recommended as one which breaks out of the narrow confines of a single discipline to join hands with others. The message that institutional actors are key determinants of national technological competitiveness is no doubt a simple one, but one which requires reinforcement, and which it is clearly perilous to ignore. Its emphasis here will ensure a wider readership for this volume – among political economists, political scientists and management specialists – than might otherwise have been the case.

Royal Holloway and Bedford New College MAIRI MACLEAN

CHRISTOPHER LAW (ed.), *Restructuring the Global Automobile Industry: National and Regional Impacts* (London: Routledge 1991. Pp.xii + 278. £40 hardback).

Originating at a conference of the Institute of British Geographers in Coventry 1989, this collection of essays focuses on the spatial implications of change and challenge in the world motor industry. Overall the 12 chapters are reasonably well balanced, nicely crafted and presented, but with too much emphasis on British experience in the latter half of the book.

The first five chapters devote their attention to world wide issues of significance. The opening chapter by Christopher Law on 'Motor Manufacturing: The Representative Industry' is a timely introduction which with some aplomb succeeds in encapsulating the essence of the turbulent change that has descended upon the industry since the 1970s. With care he indicates how important the industry is in the world economy and in social relationships as a whole. In particular, considerable emphasis is laid on the inability of Fordist methods of production to survive when faced with fierce competition, falling tariffs and rationalisation, complicated by the remorseless march of the Japanese and some Third World producers. The traditional transatlantic companies were constrained to adopt neo-Fordist production methods, enshrined in flexible firms, flexible machines, flexible workers and the incorporation of Japanese production methods where possible. The new scenario, Law argues, will continue to see the dominance of the large producers, but will probably lead to a changing spatial concentration in the industry.

This excellent introduction is followed by a succinct survey of the present state of the world automobile industry by Gerald Bloomfield. He, too, lays considerable stress on the nature of and structure of change affecting the industry on an international scale with the relative decline of the United States as a producer and the static position of Europe compared with the phenomenal rise of Japan as a major figure on the world stage. Given the weight of the western economies, Bloomfield postulates that, contrary to earlier expectations, investment has not been directed to Third World locations, but has concentrated in the core regions. This last comment leads to Robert Gwynne's paper 'New Horizons: The Third World Motor Vehicle Industry in an International Framework'. Like Bloomfield, he also finds that the prospects for Third World nations are decidedly gloomy and sees only three possible solutions. Third World companies can either forge financial and technological links with existing international major producers or enter into joint ventures with them. Alternatively Less Developed Country governments can offer incentives to multinationals to build export platforms. No matter which route is chosen the emphasis must be on export-led operations, otherwise Third World competitors will be marginalised. The fourth paper in this section is simply a brief chronological account of the evolution of the Japanese motor industry by Yasuo Miyakawa and is by far the weakest in this collection.

Hereafter the essays become more location-specific. Rubenstein concentrates on Japanese investment in America, showing how in some cases Japanese assemblers and component suppliers have gone it alone, while in others they have found it prudent to form links with domestic concerns in joint ventures both in America and in Japan. The much written-about Nissan plant at Sunderland is the subject of Garrahan and Stewart's paper. While they are right to be cautious about the impact of inwards investment to the North-East of England, given that area's previous wretched experience with it, they are probably too quick in their somewhat cynical dismissal of Japanese work methods as simply another method of shoring up capitalist methods of production. Three of the remaining six papers focus on the components industry and all emphasise the changing through different pressures on the component supply side, but as remarked earlier more international comparisons would have helped; three of the last six papers focus on England's West Midlands region. Of the remaining three papers, Malemberg's on the Swedish car industry and Rawlinson's on labour relations at Rover's Longbridge plant meet the limited objectives as defined by the authors, while, finally, Elliott and Gray demonstrate the difficulties of making local, national and international policy towards the industry coherent in the face of entrenched vested interests. All in all, though, it makes a welcome addition to the literature.

Coventry Polytechnic TOM DONNELLY

Books Received

EDWARD DE BONO, *Handbook for the Positive Revolution* (London: Penguin, 1991. Pp.xvi + 176. £8.99).

HUGH R. CLARK, *Community, Trade and Networks: Southern Fijian Province from the Third to the Thirteenth Century* (Cambridge: Cambridge University Press, 1991. Pp.xii + 266. £35).

P.J T. MORRIS, W.A. CAMPBELL and H.L ROBERTS, *Milestones in 150 Years of the Chemical Industry* (Cambridge: Royal Society of Chemistry, 1991. Pp.x + 308. £37.50).

JOHN MALONEY (ed.), *What's New in Economics?* (Manchester: Manchester University Press, 1991. Pp.ix + 326. £12.95).

DONALD A SCHON, *The Reflective Practitioner: How Professionals Think in Action* (Aldershot: Averbury, 1991. Pp.x + 374. £10.95).

ALAN HAWKINSON, *Small Business: Management and Performance* (Aldershot: Avebury, 1991. Pp.x + £29.50).

PHILIP WILLIAMSON, *National Crisis and National Government* (Cambridge: Cambridge University Press, 1992. Pp.xvii + 569).

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ROGER MUNTING and B.A. HOLDERNESS, *Crisis, Recovery and War: An Economic History of Europe, 1918–1945* (Hemel Hempstead: Philip Allan, 1991. Pp.xxx + 255. £14.95).

GUGLIELMO CARCHEDI, *Frontiers of Political Economy* (London: Verso, 1992. Pp.xi + 324. £39.95).

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GODFREY GOLZEN and ANDREW GARNER, *Smart Moves: Successful Strategies and Tactics for Career Management* (London: Penguin, 1990. Pp.ix + 228. £5.99).

WALDEN BELLO and STEPHANIE ROSENFELD, *Dragons in Distress: Asian Miracle Economies in Distress* (London: Penguin, 1992. Pp.xvii + 428. £7.99).

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